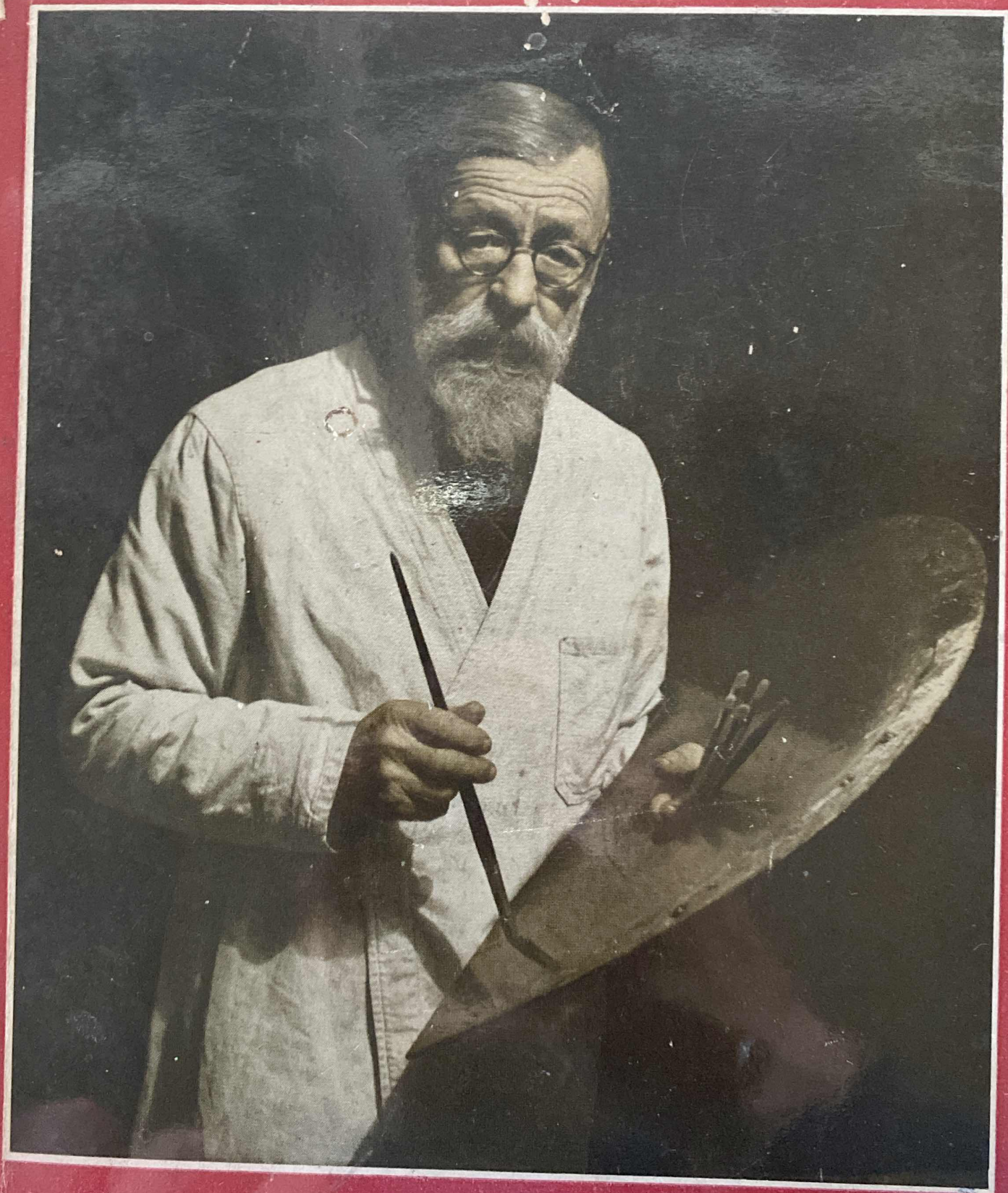
MELDRUM



THE SCIENCE OF APPEARANCES

INTRODUCTION

OUR KNOWLEDGE OF THE EXTERNAL WORLD IS DERIVED MAINLY through the sense of sight. Hearing, smell, taste and touch also play their part in revealing things to us and warning us of danger; there is much that cannot be apprehended by the eye, and sight is, of course, useless in surrounding of total darkness, but our sense of sight is by far the most important and the most extensively used of all our means of perception. According to scientists who have investigated the uses of our various senses, eighty-seven per cent. of the information we gain regarding our environment depends upon visual impressions.* That is to say, in giving us knowledge of what exists and happens around us, the eyes are more than six times as important as all other sensory organs combined.

. . . . .

In the biological evolution of man and his attainment of mental supremacy among the animals, the use and development of the sense of sight has been the deciding factor. So much more information can be gained through the eye than through any of the other senses, that the animal which relies principally upon this organ must inevitably outclass those which depend primarily upon smell, hearing or touch. The eye, in addition to giving vastly more information to the brain than all other sensory organs combined, gives its information more rapidly and effectively. Some animals, like man, depend largely upon the sense of sight; but in their case it is mainly a dependence on a special faculty. Nocturnal animals are particularly sensitive to light, and can discern things in semi-darkness; yet still these animals obtain under such circumstances the knowledge desired chiefly through the sense of hearing. Birds are keenly sensitive to movement, which they can detect, in some instances, from great heights; nevertheless they possess rudimentary eyesight and their recognition of what happens to interest them is

*It is outside of the province of this book to discuss in detail the methods by which this percentage proportion was derived. It is sufficient to record that it was not the work of painters but of other scientists. It will be understood how, on a proportionate basis (eighty-seven per cent. of knowledge coming from the sense of sight and the remaining thirteen per cent. being derived from the other four senses) the optical sense is easily and quite fairly designated as being the major or superior sense.

mainly derived through sensations of movement. But no mammal, bird, or other creature possesses eyesight comparable with that of man, in scope, versatility and general effectiveness.

In a sunlit world, it is the faculty of seeing things which confers the greatest possibility of understanding and controlling the objects and forces existing in one's environment. With most mammals, and also with fish, the sense of smell is far more important than the sense of sight. Under certain conditions the highly developed sense of smell of the dog, or of the shark, may give the creature an advantage over man, whose sense of smell is relatively dull; in the case of other animals, extreme refinement of the sense of hearing or of touch enables them to apprehend certain dangers before man would be aware of them. But, in the long run, and covering the entire range of possible experiences, the animal with a highly developed sense of sight holds an insuperable advantage over the animal that depends primarily on any other one of the recognized senses of perception. Man, in addition to the superior development of his visual organs, possesses the valuable attribute of binocular vision.

Need we say more? It requires little reflection on the part of the reader to enable him to appreciate the vast importance of the sense of sight and the part it has played in the development of the human intellect. Deprivation of sight is a terrifying prospect; although life would hold many compensations and the other senses would be exercised and developed, lack of sight means almost complete dependence on those who can still see. We have gained and continue to hold our place in the biological scheme of things through the development of our brain and the sense of sight. Without our superior visual faculties, we could never have achieved the understanding and control of our environment which makes us supreme in the animal kingdom.

How important then, is the work of the painter who concerns himself with studying and recording the actual appearance of things. If his study has been properly directed and his work honestly and competently executed, he can teach us lessons of the utmost value in the use of the eye. For, notwithstanding the extreme importance of the sense of sight, and our dependence on this faculty, there are relatively few of us who know how to use the eye properly and intelligently. We have not been taught this art. We have taken

our eyesight for granted and we use it, not to observe and learn, but to seek out something of special interest to us. We have a tendency to focus all attention on some detail that interests us for the moment, and we find it difficult to consider the problem as a whole and to observe impartially all that is before us. In many cases this selective or purely ulterior use of the eye is desirable and necessary, but we must also be capable of seeing things objectively, as mere ocular impressions, without reference to our particular fancies or interests of the moment.

In consideration of the preceding remarks it will be understood that the definite knowledge of what we see can only be gained by scientific methods of thought. Let us understand that the painter is the only man interested in appearances for their own sakes just as any other scientist is interested in the facts of his own particular form of research. In view of this he can rightly be called the scientist of appearances.

. . . . .

The science of appearances concerns the knowledge of what happens to the human eye in its impact with exterior nature. It is one of the earliest and most important forms of knowledge and yet strangely enough has found, to date, no place in the programmes of our schools and universities.

Biology teaches us that our organic evolution from the lower animals depended upon the fuller use of the eye. This led to the development of a prehensile member which, in turn, enabled the animal to pick up things and to examine them from all possible points of view. From this stage the brain grew apace and man was born.

Animals have their particular forms of knowledge, acquired as a result of and to suit their environments and needs, but because of the overwhelming importance of the faculty of sight to man he may rightly be classed as *the animal that uses its eye.*

In support of this claim, if we consider the behaviour of a dog to discover in what respect the derivation of its knowledge differs from that of a human being, we note that the dog more often uses the sense of smell, where man, to achieve the same purpose, would use the sense of sight. Instinctively it uses the olfactory sense first, switching to the more effective instrument only

when its nose fails to furnish the information desired. The sheep acts more or less in the same manner. To find her lamb the ewe does not immediately use her eye; like the dog she trusts her nose. Through her use of the superior organ, the human mother would instantly recognize her child at a distance where the ewe, dependent as she is on the sense of smell, would be obliged to get near enough to her lamb to allow this sense to function.

Note here that the superior faculty remains in operation relatively unimpaired by conditions which would utterly defeat the less comprehensive sense of smell—strong winds dispersing the effluvia of the animal. The fact that the ocular sense is less easily interfered with and is so less readily reduced in efficiency is a further proof of its general superiority.

There is little doubt that the behaviour of the lower animals shows that their particular forms of knowledge are in a larger proportion traceable to what we must call the inferior senses.

The word "inferior" is used here advisedly for we must recognize that these senses can do much that is outside of the range of ocular function. Certain tasks are quite obviously and of necessity the special work of particular senses, special in the sense that they alone can give the required information; in addition, the senses frequently work in conjunction, quite often in the human animal the sense of sight is used together with one or more of the other senses.

In man the greater proportion of his knowledge has an ocular source and examples could be cited indefinitely to support his classification as the eye-conscious animal. His domination of the other animals is clearly the inevitable result of his superior mental equipment, attained through his love of ocular experiences.*

. . . . .

The role of the painter on the stage of human life is a singularly distinct one. He deals with the *Nature and Order of Visual Pheno-*

* "How he who despises painting has no love for the philosophy in nature:
"If you despise painting, which is the sole imitator of all the visible works of nature, it is certain that you will be despising a subtle invention which with philosophical and ingenious speculation takes as its theme all the various kinds of forms, airs and scenes, plants, animals, grasses and flowers which are surrounded by light and shade. And this truly is a science and the true-born daughter of nature. But in order to speak more correctly we may call it the grandchild of nature; for all visible things derive their existence from nature, and from these same things is born painting. So therefore we may justly speak of it as the grandchild of nature and as related to God himself."—*Leonardo da Vinci.*

mena, adopting the same altruistic method employed by the pure scientists in other forms of research. He occupies a unique position in that he is the only man who analyses and defines with equal and unbiassed interest the nature and order of his visual impressions for the sheer love of establishing the qualities and orders inherent in them.

Opposed to this objective interest is the selective use of the eye in other crafts and sciences; and indeed by people generally in the ordinary way of living. For example if our watch stops, we take it to a watch-maker. Led by his past experiences the watch-maker may, perhaps, diagnoze that the main-spring has been broken and, with this in mind, he forces his eye through all the various ocular impressions leading to the details which enable him to determine whether his surmise was correct. All the sensations which did not concern this objective, and through which he has bustled his eye, are of equal interest to the painter in the *Natural Order of Visual Perception.*

The housewife who buys a pound of steak is only interested in the impressions which enable her to ascertain whether the beef-steak offered will be tender or tough; the farmer will be concerned only with those sensations which enable him to determine the progress of his crops.

As a further instance of this selective or *ulterior* use of the eye —a botanist might rush hurriedly over rocks to study a plant in which he is interested, where a geologist in his special interest in these rocks would pass without notice the very plant so ardently sought by the botanist.

It is a truism that *we see what we want to see*—a truism which does not hold good in the case of the painter, because he accepts without prejudice what he sees in the natural order of perception.

The painter makes no ulterior use of the eye; as against the special, but limited, use of the eye by the botanist or geologist the plants and rocks are, to him, merely ocular sensations which have to be treated in a natural and reasoned sequence—dispassionate in that each entity has its own place in the scale of ocular precedence. Of the factors with which he deals no one thing is in itself more important than any other, for insofar as he allows himself to deal with any of the progressive stages outside of their relative places and degrees in the *Natural Order of Visual Phenomena,* will the

condition of his work prohibit any advance. The success of his result is entirely dependent on the ability to define ocular experiences in an absolutely objective way.

His experiences in this art of visual analysis make him well aware that the principal part of his work consists in the scientific definitions of his sensations. He is therefore compelled to recognize that definite knowledge alone will enable him to find the solutions of his visual problems. Consequently he would not readily accept the imaginary distinctions which have been drawn between science and art; to him the conventional separation, supposedly existing between the two words, would only signify a distinction without a difference.

All the verbal statements of the great exponents of true painting are categoric; they state unanimously and dogmatically that the words art and science are synonymous. The idea that these men found no necessity for the two words and also that they evidently preferred the word "science" to the word "art" will no doubt be repellant to many people, indoctrined as they have been in the sentimental theories which have cluttered up the practical issues of art.

John Constable (1776-1833) a prominent unassailable figure on the mainstem of depictive science, left no doubt about his opinion:

"In such an age as this, painting should be understood, not looked upon with blind wonder, nor considered only as a poetic aspiration, but as a pursuit, legitimate, scientific and mechanical".

. . . . .

Science is rooted in inarticulate sensation; from sensation perceptions develop which in turn may form conceptions.

The painter as scientist starts from the world of sensations and the definitions and pigmental demonstrations which he makes of these form the whole craft of painting. Insofar as they bring him back to his point of departure so will his work stimulate in a similar manner the eye of the observer.

Unlike theorists in other branches of research, the painter, by the very nature of his work, must never lose touch with the source of his visual perceptions. He cannot plunge recklessly into a world of theoretical abstractions, because his job compels him to prove all his theories visually, step by step. To succeed he must proceed

through sensations and the pigmental demonstration of his perceptive definitions must bring him back to his point of departure.

The pursuit of his objective (the analysis of the particular visual phenomena he is studying) forces him to complete a circle through:

(1) Inarticulate Sensations.
(2) Perceptual definition of these sensations.
(3) Pigmental postulations of these perceptual definitions.
(4) Inarticulate sensations corresponding to those in number 1.

The completion of this circular journey is a characteristic common to all great art; an indispensable factor without which it cannot exist.

Decadent forms of art all betray the ignorance of this fundamental necessity. Some of them may begin from the starting point (number 1) but finish half-way—generally at number 3. Such works are finally classed as incomplete or unsatisfactory; as examples of work in which the artist was so sure of his theories that he thought it unnecessary to submit them to the only proof which could validate them—the return to number 1. Thinking, perhaps, of similar evidences of human vanity, Kant said,

"Your theories may err—your instincts never".

Others again started from theories and systems (numbers 2 and 3) and having ignored the basic source of all visual knowledge (number 1) were caged within these limitations. It is, of course, obvious that if they had ignored number 1, they had at the same time ignored number 4 since these two factors are identical. And so it follows that the hiatus existing in all decadent forms, the neglect to return to the empiric source of all knowledge, has rendered these forms of art sterile and barren.

All great art has been grafted on the true tradition; it has always formed school—a quality which is not to be found except in those works which can be finally classed as pure art.

If a painting be considered as a document in the science of appearances it is clear that our personal likes and dislikes do not necessarily affect that science. Such predilictions are the result of our conditioning in the formative years. A picture is not of necessity good or bad because we like or dislike it. We are dealing here with

a science and we are all aware that new scientific discoveries were not always received with open arms; they generally incurred rancorous hostility inasmuch as they collided with the inbred prejudices of the public.

Jean Francois Millet (1814-1875), commenting on the pseudo-art theories of the layman and the non-practising critic, expressed himself with the conviction of his demonstrable knowledge;

"I am not astonished by what you tell me, for I also have met the kind of people who tell you with an air of great importance and the conviction that they are saying something which cannot be upset, 'Well! at least you cannot deny it—there must be rules of composition', and they think themselves very smart in saying this because they have read it. For long I have believed that composition is only the means of communicating to others clearly and strongly what one has in mind and which the mind alone is capable of doing".

. . . . .

The methods of the painter may be explained very simply, he disposes of paint in its *Tonal, Formal and Chromatic* qualities in such a way that these factors excite the identical stimuli which his eye received from the actual subject-matter in nature.

The naive lady who declared that painting was quite easy—being merely a matter of putting the right paint on the right place —gave a complete definition of the art of painting.

The craft of the painter can be aptly compared with that of the fine actor who achieves his end through his study of general human behaviour. The actor simulates consciously this behaviour as it applies to his particular role, and in the measure of his histrionic skill the audience accepts his art as spontaneous and genuine human behaviour.

All great art is conscious. Art is controlled emotion. The beautiful song of the nightingale, however it may thrill us is not art for it is as unconscious and automatic as the purring of a cat.

Art is understanding, knowledge, mental control; and as such can be repeated by the artist. Witness, for example, the capacity of the actor to enact a comic role after having heard the news of a horrible accident to some member of his family; the power of a great pianist to maintain a high standard of work.

The inability to maintain a definite standard is the characteristic of the amateur.

The conscious control by which the real artist obtains his results

(the ability to maintain a definite standard) will form the main theme of this book. All demonstrations and statements will show that without this control art does not exist.

The significant painters of the past, men who hold their places on the direct line of evolution of depiction, were all virile and courageous men, pitiless judges of their own experiments and theories, ever willing to surmount their unreasoned sentiments and provisional definitions however painful the effort might have been.

The world of art, indeed, is no haven of rest for sentimentalists and weaklings.

. . . . .

In these pages some of the remarks made by the great painters will be quoted and interpreted. It is no slur on the greatness of these men to say that at times their assertions have to be read in the light of modern advances in a more positive and perhaps less romantic way. Many of their declarations require clarification since a painter, or for that matter any scientist, can never entirely transcend the state of knowledge extant in his own time.

Leonardo da Vinci (1452-1519) may have visualised or imagined the ultimate end, but for want of that more definite knowledge which we now possess was unable to make practical demonstrations which alone could prove his theories. If we consult his note books we cannot fail to feel how much he was interested in visual phenomena; his science flowed inevitably from this principal source of human education.

All great art is a return to nature—the nature as apprehended by dogs and cats as well as by man.

A dog recognizes his master as quickly as the most capable painter recognizes a friend, but the former act occurs in a purely automatic manner. In the recognition of his friend the painter starts from the same point as the dog, but when he paints his friend, and does so successfully, he is then in a more advanced condition. The perceptual definitions which have been understood in the course of his work now enable him to speak about the nature and character of those phenomena and physical processes which enabled him to recognize his friend automatically.

The ulterior use of the eye has already been considered and it

might be thought that the painter alone is concerned with the knowledge of appearances. This however is not the case for, quite apart from the special use of the eye in various crafts, it is obvious that if man's development from the lower animals has been based upon this knowledge it must be found useful to everyone. Its application to social, political, philosophic and scientific problems must lead to a more realistic and practical solution of these and in turn bring about a comprehension of life on a more extensive basis. After all, the main difference betweeen the life of man and that of the lower animals is merely a question of extension—which implies a fuller recognition of the order and system discernible in the cosmos.

Lack of curiosity is a mark of senescence, and the pursuit of knowledge is a moral obligation imposed on us by our development. Those who evade this obligation are but drones in the human beehive, for in producing nothing they degrade attained standards.

. . . . .

As an instance of the working of the scientific mind, da Vinci presumed that since birds, though heavier than air, could fly, sooner or later man could invent a machine heavier than air which would also fly. Great scientist though he was, his mental wings were in a degree clipped for want of knowledge and data necessary to put his aeronautical schemes into actual practice. These limitations which exist in all stages of human mental development affected him in his statements in detail on the art of painting. They did not, however, in any way affect the logical basis of his speculations.

Here are two of his remarks, the first of which holds good to-day as it did in the fifteenth century. It illustrates in no equivocal manner his scientific attitude towards mental problems.

"O Admirable Justice of thee, Thou Prime Mover! to no force hast thou permitted lack of the order and quality of its necessary effects".

The second betrays the limitations of his period and no doubt in the light of modern reasoning he would have amended it.

"Painting is concerned with all the ten attributes of sight—namely, darkness, brightness, substance and colour, form and place, remoteness and nearness, movement and rest; and it is with these attributes that this my small book will be interwoven".

From the vantage point of present-day knowledge these attributes can now be reduced to three:

(1) Sensations of lightness and darkness, hereinafter called Tone, Tonal Relationships, Tonal Values.

(2) Shapes, placements and sizes of tones, hereinafter called, Form.

(3) Transposition of these two elements into chromatic sensations, hereinafter called, Colour.

The others, Substance, Remoteness, Nearness, Movement and Rest are the effects of a cause, being the disposition of the three qualities already named which, as they happen to coincide with some *natural scheme* in this trinity of the painter's art, automatically evoke the subjective perceptions and conceptions: Substance, Remoteness, Nearness, Movement and Rest.

In the light of all we have learned since his time it is apparent that his classification of the ten attributes of painting was unduly complicated. He was obviously unaware that outside of the three attributes, *Tone, Form* and *Colour* the others were the "necessary effects." Not that the painter is not interested in these *perceptions,* but he has learnt that *Tone, Form* and *Colour* evoke them automatically.

. . . . . .

Of all the arts, the art of painting is the one which most faithfully transcribes, within its limitations, our ideas of external nature. It is the medium of expression in which the interposition of human conventions or local prejudices plays the smallest role and for this reason it can rightly be called the universal language—the only one which man possesses. Unlike literature, the comprehension of painting is not limited to any country. It is spontaneously intelligible to all people, and of all times.

The depictive records of a Rembrandt require no translation to the Oriental, and the drawings of a Hokusai are self-explanatory to the Occidental, whereas the full appreciation of the writer's efforts is only enjoyed by the people who are conversant with his language. This being so, it would seem reasonable to suppose that practical tuition should be more easily procurable in the art of painting than in any other of the arts. In reality it is much more difficult, and it is strange that this should be so, since the art of painting is purely imitative, and free from conventional theories.

The word "imitative" as applied to art will no doubt shock many people, but apparently it did not shock John Constable.

He says:

"What is painting but an imitative art? An art that is to realize, not to feign. I constantly observe that every man who will not submit to long toil in the imitation of Nature, flies off, becomes a phantom, and produces dreams of nonsense and abortions. He thinks to screen himself under a fine imagination, which is generally and almost always in young men the scapegoat of folly and idleness".

. . . . .

Lesson Note:

"You ask me if imagination takes any part in a true work of art. What just exactly do you mean by this word? If, as most people do, you are thinking of it as a distortion of things already seen, a re-arrangement of visual data or a more or less understandable illustration of some mental concepts then I have to say that imagination as so conceived plays no part in the purest form of art. Such ideas are crude and juvenile and only produce a primitive or decadent form of art. But the answer is in the affirmative if you are thinking of imagination as something in front of you—not behind you. As an instance demonstrating the popular idea of the meaning of this much misused word consider that imaginary animal, faun. What have we here but a childish re-arrangement of things seen in previous life-experiences? The body, face and arms of a man on which has been grafted, more or less successfully, the legs and horns of a goat. An elementary performance this. Surely such an obviously pregnant word must have a higher use. It has. It is a popular idea in these times that the painter who contents himself with remaining the servant of human visual data is devoid of imagination. Such an one today is dubbed derisively a 'mere imitator,' in fact he is classed as an aesthetic untouchable. Nothing could be more false for in the execution of his work he is obliged in conforming to his fixed theme to exercise imagination of the highest order. He has to start from a theory as yet an abstraction in his own mind and say to himself, 'If I transform this idea into the language of vision what will I see and how will it conform to the subject which I am attempting to interpret?' Note here that he is trying to see something which is before him, something which he has never seen in any previous life experience and which he has only thought about. In common language this visualization of a percept has been called a *mental image* and it is surely quite clear that this particular mental process can more aptly be called an act of imagination than can the mere manipulation of known things. This latter is a childish act depending on known paraphernalia which a child uses. On the contrary it takes a developed mind to be a seer. We may therefore say that painters like Velasquez or Rembrandt ('mere interpreters') could mount to higher flights of imagination than the *inventor* of a Mermaid, a Gargoyle, a Golliwog or a Dragon."

. . . . .

It is nevertheless true that, whereas the teaching of music and literature is established on a scientific basis, the art of depiction is still taught in a primitive and inefficient way. This paradoxical state of affairs can be traced to the very purity and simplicity of the art itself, which, by masking so completely its underlying theories and principles, provokes no enquiry about them. On the other hand, while it is freely conceded that the intelligent appreciation of music can only be based upon a certain knowledge of the theory

and that a nodding acquaintance with the elementary rules of grammar is held to be useful in the understanding of literature, it is deemed amply sufficient in painting to have a pair of eyes—like dogs or cats—to warrant the oft-heard assertion "I know what I see." That statement is barely true. The mere *instinctive* observance of visual facts, coupled with the average haphazard remarks about them, does not constitute exact knowledge — that knowledge by which the artist conveys sensations of reality from the flat surface of his canvas and which he acquires slowly and painfully at the expense of much thought and hard work.

Like all students of nature, the painter is one who really knows something and his knowledge happens to concern the exact definition of the sensations upon which the major part of human science has been established. Unfortunately, in spite of the repeated assertions and demonstrations of all the really great artists to prove the validity and importance of this fact, a sentimental prejudice or reluctance has prevailed against the acknowledgment of the intellectual debt owing to the artist. This refusal to consider great paintings as the visual manifestations of a type of pure science, capable of transmitting more than blind sensual emotions, has led to the complete abandonment of common-sense reasoning methods, with the result that the critics and the public are still groping in the wilds of metaphysics and maudlin sentiment; what is more serious, the aspiring student of painting is left without any practical aid.

. . . . .

A great deal has been written on the subject of painting. Many art primers have been devised, but most of these preach stultifying sentiments and there are few—if any—which are not self-contradictory. Many of their teachings are based on the false premise that certain people are born with the "artistic temperament" while others are not thus blessed. The former are classed with the half-witted of certain savage tribes, and credited with the possession of mysterious powers; they are said to be "talented," "inspired," "gifted," and in such-wise the art philosophers proceed to label them with a host of sacrosanct terms which long ere now should have been relegated to the rubbish-heap of obsolete terminology. Starting from this basis, these teachers have logically assumed that the "artistic temperament"—being an accident of birth—could not

be taught or acquired and still further that any attempt to make the fortunate inheritors use commonsense methods might perhaps obstruct the free expression of this abnormal physical state. From these pseudo-scientific hypotheses they have accordingly limited their pedagogic intentions to a few elementary tricks—tricks which the intelligent student could readily learn without the aid of any mentor. It is of course an obvious fact that people are born with more or less aptitude for different kinds of work, but there is no reason to suppose that the artist has been endowed in any more mysterious way than he who applies his mental activities to the consideration of plants, trees and shrubs. The main difference here is that the painter records and proves his theories on a piece of canvas, while the botanist writes them down on paper for the consideration and criticism of others.

Why then this differentiation between the scientist and the artist? Why is the great botanist described by such terms as "eminent," "learned," while the word "genius" is used to designate his compeer, the great artist? The reason is not far to seek, and is a twofold one. Firstly, on an arbitrary and purely conventional classification the artist has been excluded from the category of knowledgeable men and secondly, the exact objectives of other sciences have been accepted by the majority of people, whereas the lesson of the art of painting remains undetermined. The obvious reason for this lies in the utter inability of the public to follow the reasoning processes by which the artist attains his results—a difficulty which does not exist to the same extent in the other branches of human activity.

Many great philosophers have written on the subject of aesthetics, but most of what they have written plainly shows that they did not understand the impulse which actuated the great artists. They wrote generally under the mistaken belief that these craftsmen were using their craft knowledge to illustrate literary subject-matter. To them, the artist so far from being a man with his own particular story to tell, was merely a craftsman to be employed in the illustration of the literary subject-matter which happened to interest them. In this way the great painters have been derided and forced to use their talents in a secondary way while knowing at the same time the wonderful nature of the great story they could have told, had they been left untrammelled. In an age when the priest

reigned supreme the artist was constrained to use his knowledge in the furtherance of religious propaganda; and when the soldier held sway (as in the time of Napoleon) the artist who refused to paint battle pieces could die unknown in a garret, however great his place in the history of art might be later on. In this way, the painter capable of telling the most wonderful story that human beings could listen to has been confuted, thwarted and compelled to lower his ideals.

We find even such a philosopher as Schopenhauer blind to the real nature of the artist's job. Like others he would obviously and unconsciously have pulled the painter down to a lower level—the interpretation of a form of subject-matter which does not concern the true painter.

Velasquez (1599-1660) might paint a plucked fowl hanging on a wall; Rembrandt (1606-1669) might paint a carcass of beef in a butcher's shop; Michelangelo (1475-1564) might say,

"It is better to paint a fish in the market stall well than to paint an archangel badly"

and poor Francois Millet (1814-1875) who lived a life of pecuniary misery, might complain bitterly that,

"With us, art is no longer anything more than an accessory; a drawing room accomplishment; whereas formerly, and even down to the middle ages it was one of the columns of ancient society—its conscience and the expression of its religious feeling. What have the best brains of our period done for art? Less than nothing! Lamartine (I saw him choosing out his favourite pictures in the Salon of 1848) was only touched by a subject that corresponded with his political or literary interests. He would never have placed a picture of Rembrandt's in his own house. Victor Hugo puts Louis Boulanger and Delacroix on the same level. George Sand has a woman's prudence, and gets out of the question with fine musical words. Alexandre Dumas is under the thumb of Delacroix, and apart from him does not think freely. I have not been able to dig out a single really felt page in Balzac, Eugene Sue, Frederic Soulie, Barbier, Mery, etc.—a single page that might serve as a guide, or that bears witness to a real understanding of art",

but all to no avail, for in spite of the denegations of the great painters it is still necessary to try to make the public understand the real mission of the painter—a mission which he alone can perform.

. . . . .

To paint one must learn to think as a painter, for this particular state of mind is the alpha and omega of the painter's craft. The technical side of his work is relatively easy, and in no art can it be more truly said that he who has something to say will always find

the means of expression. Indeed so far are the means of expression negligible in the pure science of painting (as distinct from applied art), that it can be said without exaggeration that the house-painter knows as much about the mixing of paints, their drying and covering qualities, the tools necessary and how to use them, as the most accomplished artist.

The outstanding difference between the artist and other craftsmen does not involve any distinct quality or difference in the organ of sight. Were it so his depictive expressions would be unintelligible to the average person; in fact they would be still less universally comprehensible than the great works of literature. To achieve intelligible results he must not only see as others but must *know* what he sees. We do not require to be practising painters to have ideas about what we see, but to talk intelligibly to others in the language of depiction we require to know *exactly* what we see. Were this not so any one could paint immediately, since the technical side of painting is comparatively easy to master. To realize his objective the painter must carry his ocular investigations far past the stage at which the average person stops. He must take them past the purely sensorial use of the eye into the intellectual domain; he must learn to question his eye on what is happening to it and he must find the right answer. This study cultivates that distinctive attitude of mind towards all ocular phenomena which is the special attribute of the painter. It is the scientific outlook on visual phenomena, inasmuch as it is the only one which is submitted to *absolute demonstration.* By its aid the artist is enabled to study and resolve ocular propositions which to the ordinary observer appear as insoluble mysteries. To explain more definitely the exact nature of this scientific method of the consideration and analysis of the ocular impressions, it will be useful to resume briefly, although in a quasi-poetical way, one of the sensorial experiences of the human being from infancy upward. For example, when the new born baby's senses first make contact with exterior nature they may be likened to a set of separate compartments, each one complete in itself, but having no intermediate connections. It looks, listens, smells, touches and tastes in an inarticulate way, because these sensations have as yet no co-ordination and consequently provoke no cerebral perceptions and conceptions. In the first year of its existence, impelled by an invincible instinct, the baby makes its first

steps, but so little part does the brain yet play in its existence that it would just as readily walk along the edge of a precipice as on the carpeted floor of a room. Fortunately the experience of the mother comes in here; she senses the helpless condition of her offspring and takes the safest way to make it aware of the numerous dangers of existence. The baby is accordingly placed on a solid even floor to try its first wobbly experiences as a biped. Even here, however, all dangers are not abolished (fortunately for the education of the child); there is a fold in the carpet, or a footstool happens to lie handy, and over these the child attempts to push its legs in a purely automatic way, with the unforeseen result that its head comes into violent contact with the floor. Unlike the fructuous experience of Newton and the apple, which occasioned such highly philosophic reflections, this accident only provokes a series of inarticulate yells; the infant is astonished; it clamours to high heaven for revenge, for it seems to think that in some mysterious way it has been the victim of a silly and painful practical joke. Being highly stimulated the baby's brain begins to work. It connects up with all the different sense organs, demanding to know the cause of the commotion. The eye sends back its message to the effect that at a given moment it experienced a certain set of sensations; the sense of touch replies with its report, and the brain then, putting two and two together, decides that a certain set of ocular perceptions coincided with certain painful tactile sensations.

From this particular experience, not necessarily the first or last of its kind, co-ordination between the brain and the various senses begins to be established. The child learns that certain combinations of optic, acoustic, tactile, gustatory, or olfactory sensations constitute either desirable or undesirable experiences and by the time it reaches adult life the co-ordination has become so complete that the exact source of its mental definitions becomes difficult to discern.

This same evolution from inarticulate sensation to the most perfect state of mental and sensorial harmony can likewise be noted in the lower animals. The caged bird learns that the ocular sensations which constitute the bars of his prison represent something hard, while the trapped bird brought into a room where it senses for the first time certain things, which to us represent glass windows, ignores completely the tangible sensations which they can convey and dashes itself fruitlessly against the glass.

The state of harmonious working partnership between the brain and the senses to which the adult attains through his sensorial experiences, so far from being desirable to the artist, constitutes his greatest impediment. In his two-dimensional world of visual phenomena it spells confusion because the nature of his job compels him to deal solely with the ocular impressions. In actual practice he discovers that the sensorial sources of his perceptions have been so far interwoven that they are difficult to unravel.

In his student days he will find himself trying to realize sensations of reality, with a combination of definitions which have nothing to do with the sense of sight. On a warm day he will instinctively plaster *warm* colours on his canvas, because he *feels* physically warm, in spite of the fact that he *sees* cool colours.* He will draw in a symbolic way the boundary lines of something which he knows to be tactually real but which, being in shadow, is optically non-existent. Through a series of repeated failures to realize the illusion of reality on a flat surface by any other means than the exact postulation of *pure ocular facts,* he finally becomes adept in the art of subtracting, and dealing with these to the exclusion of all others. The ability to deal with ocular facts in the order of perception is practically the whole difficulty of the painter and is only acquired after years of study and demonstration with the brush in hand. Insofar as technical problems are relatively easy to resolve it may be said without exaggeration that he who *knows* what he sees can paint.

The painter's mental equipment, therefore, is a special one and his attitude of mind is in certain respects a reversion to the early stage in childhood wherein ocular phenomena are merely visual sensations without any added meanings. But in his case the reversion to the two dimensional world of vision is a conscious act adopted in pursuance of his special purpose. It is an attitude of mind—a mental method of which the exact nature has never been clearly understood by art-philosophers, writers and critics.

The reality of the painter is the reality of appearances, which

* The words "cool" and "warm" as applied to visual sensations have little to do with the more precise use made of them in describing tactile sensations. For want of more expressive terms it is convenient to use them to describe the extremes of chromatic visual sensations. And so we speak of the sensation of redness or yellowness as being "warm", and the sensation of blueness as being "cold". In the case of the first two colours the prevalence of them in fires has established a certain vague connection with the tactile sensation of warmness and the blue of sky and the sea has established the same connection with the tactile sensation of coolness.

evoke the recognition of concrete physical objects. The various attributes of a tree can be suggested by a hieroglyphic outline or by the still vaguer symbol T-R-E-E; but when the artist starts to paint a tree, its existence as a tree (a physical abstraction) must be reduced from the three-dimensional world of physical objects to the two-dimensional world of vision. In this way the painter's objective is brought within the exegetical possibilities of his flat canvas. The concrete reality must give place to the reality of the pattern—the ocular sensations of tones, forms and colours, the truth of vision.

To the confusion of the aspiring artist, derivative factors have been elaborated and theorized on by most of the art philosophers up to date under the mistaken idea that they directly affected the work of painting. Such are all the ingenious systems of teaching (theoretically) how to obtain correct Composition, Perspective or Anatomy (automatic qualities). The insistence upon these artificial and irrelevant theories, which have for the main part been founded on the conventional ideas of each epoch as to what constituted beauty or normal depictive realization, has crippled the efforts of generations of earnest students and artists, by diverting their efforts from the direct use of the eye, to the study of abstract systems. Only the great masters of each period have managed to escape in part from the stultifying effects of these disastrous schemes, and in so doing they succeeded in leaving behind them fixed ocular records (their pictures) which marked and taught a higher degree of the knowledge of appearances. From the testimony of Corot, one of the most significant masters of recent times, we may deduce his condemnation and renouncement of the unpractical theories which he had been taught in the Parisian schools.

"I went to Paris, but learnt so little there that I could not manage even the smallest drawing. Two men would stop to chat, and I would begin to sketch them, bit by bit, starting from the head for instance; then they would part and all I had on my paper was sundry bits of heads. Or children would be sitting on the steps of some church, and again I would begin, only for their mother to call them away. Thus my sketch book was filled with bits of hands, feet and heads; so I resolved for the future not to go home without having done a complete work, and for the first time I started *drawing in the mass*. I set myself to take in a group at a glance, and if it stopped for a short time only, at least I had got its character, its general unconscious attitude, and if it remained I could add more detail. I have done this very often with a few strokes, and have succeeded in catching a general impression of a ballet and its surroundings at the Opera, just on a scrap of paper inside my hat."

These remarks show clearly the point of departure from which Corot began to use his own eyes to check up the truth or falsity of

purely academic theories; they mark the genesis of the future master and teacher. His reference to "drawing in the mass" shows a dawning recognition of the demonstrable fact that the appearance of things is perceived in a certain order; a truth unknown to the earlier painters. This physical fact will be referred to herein as the *Scientific Order of the Ocular Impressions.*

The word "composition" was used by the older writers to denote that sense of rhythm, order and unity which exists in any part of nature; but having stated the existence of these qualities from pictures and not from nature they fell into the error of thinking that composition lay in the art itself, and not in the theme—they mistook the ritual for the religion. Denouncing this heresy Constable said,

"It appears to me that pictures have been overvalued; held up by a blind admiration as the ideal things, and almost as standards by which nature is to be judged rather than the reverse; and this false estimate has been sanctioned by the extravagant epithets that have been applied to the painter, as the "divine", the "inspired", and so forth, yet, in reality, what are the most sublime productions of the pencil but selections of some of the forms of nature, and copies of a few of her evanescent effects; and this is the result, not of inspiration but of long and patient study under the direction of much good sense. It was said by Sir Thomas Lawrence that 'We can never hope to compete with nature in the beauty and delicacy of her separate forms or colours—our only chance is in selection and combination.' Nothing can be more true—and it may be added that selection and combination are learned from nature herself who constantly presents us with compositions of her own far more beautiful than the happiest arranged by human skill".

Again, in spite of the ingeniosity of these unconscious idolators, it still remains a visually demonstrable fact that the correct disposition of paint in accordance with some natural scheme produces as a matter of course those sensations which are described by the word "perspective"; it is equally subject to proof that although a course of anatomy might add to the general education of the student, it would not in any way help him to know the *appearance* of anatomy. The evolution of depictive art plainly shows the abortive effects of these ill-digested theories. Ideas on artificial composition led painters to distort the impeccable compositions of nature, and, at different periods in art history, we can plainly observe the contemporary theories on composition which eventually classed these ideas as artistic fashions. The theories of perspective brought about the unemotional application of them, the flouting of the eye as a criterion; and the study of anatomy, which was considered absolutely necessary in the depiction of the human being, produced in

the artists an anatomical obsession, which made them see all their models standardized as anatomical specimens, to the almost complete exclusion of their individual characteristics.

. . . . .

The lesson to be learnt from the evidences contained in the history of painting studied in chronological order is illuminating. Art manifestations are not sporadic—they are the result of a cause and are linked to that cause. The study of an individual painter's work considered as a beginning and end in itself leads to mental impotence.

The science of depiction started from hieroglyphs and ideograms which had to be translated in the mind of the reader (note the word, "reader") to convey a more or less vague mental picture of what the artist had experienced in visual sensations. The successive stages in the history of this science denote a progress in the knowledge of appearances, as against the statements of arbitrary symbols to represent appearances more or less vicariously. Each successive advance was marked by the fact that the work of the artist began to be more spontaneously understandable without the necessity for the process of interpretation required in the earlier stages. This was brought about by the painter's greater knowledge of appearances. His greater science enabled him to eliminate conventions necessary in the more primitive stages and to replace them with active scientific definitions. In this way his picture became more readily intelligible.

On this point it is well to remember that from the symbols C A T (which we accept) we mentally construct a picture of a well known animal, and we have to be scrupulously on guard to distinguish between the word, symbol or ideogram which requires translation as against the more readily understandable statements on appearances.

Reviewing the whole movement in depiction we have now arrived at a stage wherein the major part of what could be called a truly modern painting is instantly comprehensible to the observer (note the word *"observer"* as against *"reader"*).

. . . . .

The hostility which so often greeted the works of the great pacemakers in the art of painting came from people who resisted the

recognition of the greater value of the statements of appearances which supplanted certain conventions to which they had become endeared. In general it may be said that all advances in science have come into collision with the conditioned habits of the mass of the people. Some of these were so slight that like a minor earth tremor they passed unperceived. Others again were of such a revolutionary nature that they provoked a world-wide mental earthquake which rivalled the blowing-up of a Krakatoa. The mental seismographs of the world all registered the publication of the "Origin of Species" as a catastrophic occurrence which even today is still reverberating. In the world of painting many of the demonstrable advances made, even further back than the time of Darwin, are still subjected to futile hostility.

Until now, text-books on painting have contained many sentimental theories put forward as axiomatic—to be accepted without question. The object of this text-book will therefore be directed towards the destruction of sentimental and unpractical ideas with the view of introducing the reader and student to the sphere of virile practice.

The world of art has always been the last refuge of the philanderer, whose meanderings are seldom in accordance with the dictum of Michelangelo, "Pure art will never draw a tear," and his airy excursions into the realm of aesthetics must be ruthlessly classed as useless and dangerous.

A cursory study of the verbal statements of the significant painters of the past reveals that these men considered themselves as craftsmen and that verbally they have tried to explain their craft in commonsense language. The correct reading of all their statements, either verbal or pigmental, clearly shows that the impulse governing these thoughts and actions was the desire to appraise the nature and order of their visual perceptions. In other words these men were, without exception, entirely governed by what has been called so aptly "the scientific conscience." This desire for judgment which the sentimentalists recoil from does not imply a renunciation of the emotions which are produced by art. It means only that man has an instinctive desire to prove his own theories and power, to accord them more exactly to himself and to the world and that he accepts the inevitable consequences of this behaviour.

What we call ART has existed in all forms of civilization. There

is a lesson to be learnt from this—but that lesson will never be learnt until we resolve to discover the role which the painter has played; the lesson he had to teach; his real impulse. De Goncourt said cynically,

"That which hears the greatest number of stupid assertions in the world is a picture in a museum".

. . . . .

So let us state once more that the source of all knowledge is in sensation; that ocular sensations occupy an all-important place and that carefully considered definitions of them engender in turn rational thoughts.

With this biological basis in mind we may forsee that in the near future the education of children must start from the study of the nature and order of visual phenomena and with the conviction that from a generation of people so conditioned man will start his career as a truly rational animal.

Every age has its own fashions, prejudices and theories; in the past these have been named and labelled by such words as Baroque, Rococo, Mannerist, etc., words which were applied to the designation of fashionable or decadent forms of art and have in due course fallen out of use.

The sterile convention of to-day is dubbed Modernism. It will be sufficient here to state that this new fashion, in common with all the decadent fashions of the past, exhibits a deviation from the principles which have produced all the *pure art* of the past—a flight from, or fear of, the reality of appearances.

The Mannerist of yesterday is the Modernist of to-day. They differ only in the label applied, for they are similar in the respect that they both impose their paltry schemes on the theories of nature's dispositions of Tone, Form and Colour.

Castigating the fashionable artists of his day, Constable expresses himself forcibly,

"I shall conclude with a brief allusion to a certain set of painters who, having substituted falsehood for truth, and formed a style mean and mechanical, are termed Mannerists. Much of the confusion of opinions in art arising from false taste is caused by work of this stamp, for *if the Mannerists had never existed, painting would always have been easily understood*".

To remodel Constable's last phrase and bring it up to date we

may say that if the Modernists had never existed the people of today would recognize and appreciate without difficulty the true art of this period.

As against "mean and mechanical" forms of art, those which have stood the test of time do not show hysterical attempts to achieve personal expression at the expense of visual truths. Enduring art is imbued with the truths of vision which are impersonal, international and eternal; it shouts loudly that the authors felt themselves to be humble men; that they knew their own limitations and that they were aware that the physical laws governing beauty, harmony, suitability, existed before they were born and would continue after they were dead. They sank themselves in the consideration of these cosmic principles and since every art conveys the thoughts which the artist had (be he great, mediocre, or incompetent), they succeeded in making great art—the art which conceals art. Thus their art statements, either pigmental or verbal, were those of the true scientist, impersonal and humble.*

Art is a religion—a religion only insofar as it expresses the humility of the artist—his worship of the beauty of nature of which he resigns himself to be a humble part. Comparisons have been made of the impulses lying behind the work of the great artists and scientists and we have found that these impulses were identical in both cases; that there was no frontier line separating the worlds of Science and Art.

Albert Einstein has expressed this truly religious impulse,

"My religious feeling is a humble amazement at the order revealed in the small patch of reality to which our feeble intelligence is equal".

And if we compare this credo with the profession of faith of Leonardo as recorded in these words,

"O Admirable Justice of Thee, Thou Prime Mover! To no force hast thou permitted lack of the order and quality of its necessary effects".

we find that although the words have changed, the meaning remains unaltered.

Statements to the same effect have been made by all the great thinkers of past and present times. It would be tedious to quote them *in extenso* and it is sufficient at this point to note that they were

* "No arrogant man was ever permitted to see Nature in all her beauty".—Constable.

all actuated by the same feeling of reverence for and obedience to, the immutable and impersonal laws of cause and effect.

In another sphere Bach stood out from his contemporaries, from which the hasty deduction might be made that he had expressed himself in a more personal way. It is easy to fall into this error and perhaps more difficult to understand that he reached this prominence through his acceptance of the laws governing aural concord and harmony. This same act of abnegation is the outstanding characteristic of a Shakespeare, a Goethe, or any great artist.

Bach was a universalist, with the humility of the true artist, content to remain the hierophant of the principles which govern the laws of sound. It was this acknowledgement of the forces within and outside of himself which, in contrast with the less reverent attitude of mind actuating lesser men, made him a mountain peak in the world of pure music.

Similarly we find that the great instrumentalist accepts the restrictions imposed on him by the limitations of his instrument and the message as conceived by the composer. He is not one who can be classed a good exponent of Beethoven and a bad exponent of Chopin or Schumann. Like the great composers and painters he accepts the ambit in which his art can best function, and therefore, irrespective of the composition he executes, he performs them all equally well. Goethe has truly said, "The artist is known by his power to work within limitations," and these limitations be it noted are not limitations which he imposes on himself (i.e. artificial or conventional theories), but the limitations imposed on him as an interpreter.

Coming back to the sphere of painting, the indispensable links in the chain of the development of the science of appearances are characterized by the suppression of personal ideas and the interpretation of impersonal truths.* Rembrandt demonstrated clearly his renunciation of conventional theories and fashions and the recognition that the laws which govern art were not affected in any way by his personal preferences. With brush in hand he forgot himself

* To understand the true meaning of this statement it is necessary to realize the exact nature of the pure painter's objective. The illustrations of literary subject-matter imposed upon him by art patrons being varied in character they succeeded in hiding the very qualities in his pictures which constituted their actual significance. The true painter has a more humble and self-effacing story to tell which, although of international significance, disappears before the bombast and noise of the flamboyant *subject-picture.*

and like a Galileo he suffered the disdain of the people. As a youth, still working within the accepted conventions and traditions, his work was welcomed, but as a fearless searcher for the truth he passed out of the tradition, as understood by the mass of the people and at this point (marking the birth of the great Rembrandt) he was forsaken and ended his days in a poor-house. The analogy between the torture inflicted upon a Galileo and the treatment accorded a Rembrandt is significant.

The punishment or neglect of the pioneer in art and science has unfortunately always been the hall-mark of his greatness. We have always had with us the irresponsible and cruel critics and perverters —the vain theorists who indoctrine the easily influenced masses into crucifying the men who achieve real progress. Vanity, self-interest, timidity and ignorance are doubtless the causes of this inhuman behaviour. If this book serves to dissipate in even a small degree the ignorance surrounding the real objective of the painter it will have achieved something.

The obstinacy of the true painters in pursuing their chosen way staunchly through all the exasperating conditions inhumanly imposed on them by the want of interest from the public and by the irresponsible statements of critics, has been a source of wonderment to many. It is timely here to remind readers that the tenacity of purpose which these men exhibited and which gave them the courage to hold fast was born of the conviction that they were right and that they had achieved important advances.

Men of "genius" (the word is anathema) are always conscious of what they have done. Undertaking humble and practical jobs they knew when they had succeeded and when they had failed and having long passed through the adolescent stage of simpering vanity they have never found consolation or help in empty compliments.

Did not Rousseau in a letter to a friend ably sum up the justified protests of the whole race of artists,

"Art will never come except from some little disregarded corner where some isolated man is studying the mysteries of nature fully assured that the answer which he finds is good for him *is also good for humanity* whatever may be the number of succeeding generations".

CHAPTER I.

Objectivity and Subjectivity

FOR MANY REASONS THE NATURE OF THE IMPULSE WHICH PRODUCED the works of the master painters is not easily discernible. Such as it is, however, it is always clearly marked in all human graphic experiments finally classed as true developments. The exact nature of this impulse has unfortunately been obscured from earliest times by the more popular appeals of literary impositions, prejudices and fashions forming a veritable smoke screen which few people ever see through. This barrier once penetrated, the motives of the true painters become seen as the search for the knowledge of the orders, degrees and qualities of the ocular sensations.

The interested non-practitioner seldom goes beyond his conditioned reactions to painting. This tends to make him more interested in the representation of legends, fairy-tales and moral principles—to him more easily discernible and understandable than the story which pure objective facts have to tell.

Due to the precedence taken by these elementary interests the painter's success has been measured by his ability to please people in the illustration of the stories which they had been conditioned to welcome. Remark the words "conditioned to welcome," for such predilections change in different countries at different times. They are therefore man-made mental kinks and in the art of painting, considered as a language, little country dialects. How far they were opposed to the international language of the painter, how far they were inimical to his free flowering, the reader is left to judge. The object of this treatise is to provide him with a standard of judgment.

As an example of unawakened appreciation of the true significance of the *pure art of painting* the devout Christian would be inclined to take more interest in a second-rate illustration of a Virgin Mary or a Christ on the Cross than in the statements of objective visual phenomena which conveyed automatically the story in which he was interested. Since it is always difficult to override conditioned prejudices it would naturally be much easier for the Buddhist, Brahmin or Mohammedan to view the picture of a Christ from the angle of approach from which all great and pure art is evaluated.

The Christian, prompted by his conditioned habits, would more readily excuse poor craftsmanship in such subject-matter. Nothing, however, in the conditioned habits of the non-Christian, would make him accord this leniency and consequently his sole and only possible concern would be entirely objective. If, on the other hand, the picture contained a high degree of objective statements, his interest would be aroused for such statements are of universal significance and require no extraneous supports. For similar reasons the Christian would find it easy to view objectively an illustration of some story in Buddhist mythology without being in any way concerned in the particular story which would be the main interest of the Buddhist.

Summing up, we can say that either of the two pictures under discussion would be great works of art if they were great pieces of depictive craftsmanship, for art as a science rides airily over man's tentative theories and schemes, whether religious, sociological, political or philosophical.

. . . . .

Lesson Note:

"You are mistaken if you think that the subject of this crucifixion by Velasquez is an illustration of an episode in the life of the central figure in Christianity. No such thing. It is a work of pure art. It is the illustration of the dispositions and relationships of tones, forms and colours revealed from the body of a model chosen by Velasquez and posed in a certain position. Had this great painter been painting a "Venus" his subject-matter would have been the same except that it was revealed from different objects. Being a great painter any other ulterior subject-matter would have been painted with equal interest and reverence. Manet said the same thing in his own language 'le personage principal dans un tableau c'est la lumière,'* and surely he would know better than these irresponsible non-practitioners who urge you to stop painting 'ordinary things' and show your talent on what they call a 'noble subject.' "

The Painter's Sphere of Activity

The unique difficulty for the painter is in the objective analysis of ocular sensation. For him the world of *things* must cease to exist, he must make his investigations within the particular phase of perceptivity in which ocular phenomena are sensed and defined as such.

It is owing to this necessity that the art of painting is such a difficult one since the skill of the painter to perform his task is in equal

* The principal person in a picture is light.

ratio with his ability to leave the *named-world* and to pursue his investigations in the region of physical ocular sensations—purely a psychological difficulty.

Considering the sphere of the painter's activities in another and perhaps simpler way let us say that from the moment he takes his palette and brushes in hand his actual subject of study from a fixed focussing point can be likened to a flat curtain with *light and dark disturbances** producing feelings of shapes and sizes transposed into various chromatic sensations. In this region *things* do not exist, the awareness of them has no place and all the subjective perceptions and conceptions derived from objective perceptions (see page 37) are still further removed from the nature of the painter's job. His difficulty lies in the acquirement of the ability to remain at the source of all percepts and concepts (Objective Perception) derived through the organ of sight.

. . . . .

Lesson Note:

"Work for knowledge. Do not set out to make a picture, for a picture is only a by-product of the accumulation of the ocular facts demonstrated on your canvas. Don't forget what your job is. Don't go poaching on the preserves of the writer, musician or physician. The most marvellous story you can tell is the sublime one of nature's visual facts. What more do you want? No other scientist has a greater mission or a finer subject."

. . . . .

While using the words "objectivity" and "subjectivity" as they concern the painter it will be helpful to consider briefly the difference between the knowledge of words as defined in dictionaries and the fixed meaning of them as related to human experiences. We are too apt to think that in using words in an abstract way their actual meanings have been mentally digested and become a part of ourselves. Thus it is assumed by the scholar that since he can repeat the verbal definition of the word "objective" he possesses as a matter of course the power of being objective in his actions. This easy assumption does not follow automatically for an unexpected difficulty rises here between precept and practice. With brush in hand the painter in his efforts to reproduce sensations of reality suffers many confusing and humiliating rebuffs. Insofar as he understands where his failures lie he learns that he has not sufficiently recognized the all important difference between objective pigmental statements and subjective percepts and concepts; in other words he finds that

* See page 52.

in the attempt to reveal sensations through the medium of his flat canvas and paint he has called in the aid of extra-ocular subjective ideas. The interested reader is recommended to test the truth of this statement by trying to paint some simple subject such as a cup on a table against a plain background. His result will assuredly be of a hybrid nature; a small amount of objective realization and a large amount of useless symbolic statements on facts having nothing to do with appearances. He will find that in many parts of his work he has *symbolized many facts* on *tangible edges* which were not seen ——the sense of touch in this respect being the most persistent intruder into the field of appearances. This experiment if honestly conducted, will prove that *the act of being entirely objective* can only be learnt through countless demonstrations. It is not sufficient to paint what we think we see, we must paint what we actually do see. (c.f. Relativity, Chapter II.)

Mental Control the Sine Qua Non

It is a mark of the finite quality of the human mind that man is compelled to relate and classify the phenomena of nature to obtain mental control over the effects and causes of them. For this reason the painter, confronted with the infinity of tones, forms and colours presented by nature, is made aware that he must generalize and classify them into mentally controllable orders and families to permit him to devise a pigmental formula which will give back the obvious characteristics of his problem. This necessity for control over the phenomena of appearances from their fundamental characteristics is an ever-increasing one for as the art of depiction becomes more and more complex and spontaneously intelligible so the mental control of the methods employed becomes more imperative and exacting. Progress without mental control is impossible.* Of course, as we know, all things that happen in nature are the effects of causes which may or may not be clearly discernible and although the mutations which form the visible world flow imperceptibly into each other it is difficult to make efficient working theories on such a maze of cause and effect. As a result it is necessary to generalize, to classify from what is, at least, clearly obvious and from this basis proceed in the splitting-up or complicating process to the point at which control is lost. When this occurs there is no alternative but to return to an earlier phase and to start rebuilding on a controlled foundation.

* "Those who are enamoured of practice without science are like a pilot who goes into a ship without rudder or compass and never has any certainty where he is going."—*Leonardo da Vinci.*

Lesson Notes:

"You've lost yourself—you don't know where you are. That's the kind of thing we human beings do. We push ahead in all sorts of ways, irresponsibly, to wonder where we are. Now, the rabbit will emerge from its warren looking not only forward, but to the right, left and behind him. In this way he knows the road back so well that he knows what to do when he is surprised. Be like the rabbit, spend more time examining the road from whence you came. Learn how to unfinish your work, so that you may find yourself ready and able to simplify it back to the stage at which you were sure of yourself—the stage where you can say 'I know where I am.'"

. . . . .

"Suppose while on the way to your canvas you were asked to say what you meant to do, could you say it or would you be ashamed to? If your proposed change had been carefully thought out you would not be ashamed to talk about it, but if you were caught approaching your canvas with the hope that some lucky technical accident might happen you would hesitate to confess your irresponsibility."

. . . . .

"When you begin to feel nervous about your work don't try to push further ahead. Your nervousness is the sign that you are starting to lose mental control of your work. Reflect how often the pianist must practise simple exercises and scales that he may play them more neatly and quickly."

. . . . .

The science of appearances as part of man's development has progressed, as have other sciences in a fluctuating way. The progress of any kind of knowledge has at times been momentarily halted in dead ends and these halts in the history of art are periods in which artists have drifted away from the contemplation of nature to interest themselves in fashionable theories and conventions. Art produced in such times is barren, it dies without progeny while the objective art of the masters forms stepping stones to further advances. As we have said, true art alone can form school. During such decadent periods the artist who would revivify painting must strip his work of all fashionable conventions and blandishments. He must simplify or "unfinish" it until it breathes again in an atmosphere of controlled facts. There are few great artists, for such an act demands a degree of courage and intellectual integrity which not many people possess.

The words "mental control" must be stressed, because the whole history of depiction shows an ever-increasing quanta of controlled facts and a diminishing quanta of pigmental accidents. The final criterion of a true work of art does not rest on what

has merely happened, but on demonstrable knowledge, however elementary.

. . . . .

Lesson Notes:

"A controlled result, however humble and elementary, is the only thing which makes for your continued progress."

. . . . .

"Become aware of yourself. When you are tired you may still be able to choose the right colours and to draw, but your control of tonal relationships will immediately show the effects of your fatigue. This is to say that your work will reflect your condition and become tired—even dead."

. . . . .

We all start life with an intense interest in demonstrable facts. The average child's drawing pleases for it reflects the fresh state of a mind dealing with simple visual problems and describing them enthusiastically in clear juvenile terms. It is unfortunate that in only too many cases this interest becomes perverted in the struggle for existence in any society which bans the free expression of human instincts. Such repressions produce inevitably a decadent and fashionable form of art since the true instincts of the artist have been inhibited and overridden by ephemeral impositions. Just as we find the art of the unsophisticated child charming, so do we nowadays prefer the hastily done sketches of John Constable to the elaborate pictures which he made for exhibition purposes. A work of art conveys automatically the mental condition of the author, consequently we appreciate these sketches in which he let himself go in the free expression of his instincts. On the other hand the pretensions of the opportunist and conventional artist induce disagreeable sensations from which we are only too glad to escape.

Pure art, whether the work of the child or the great painter, exalts but never depresses and the feelings which pictures produce in us are the positive indications denoting the difference between true and pseudo art—for true art is an expression of joy, not sadness.

We have said that the painter must define and translate ocular phenomena in their orders, degrees and qualities and that in this endeavour he finds, through many defeats and discouragements, that the use of the eye as employed in ordinary life in no way helps to bridge the gap between inarticulate sensation and reasoned demonstrable definition.

In the effort to become graphically articulate he is led to the conclusion that the definite knowledge of appearances cannot be acquired by walking around things (c.f. Cro-Magnon, page 233) and viewing his subject-matter in the ulterior subjective way sufficient for the everyday purposes of life.

In the pursuit of his goal he finds that a definite method of study is exacted and that certain necessities are imposed on him. Stated briefly these necessities require that he must view his subject from a fixed focussing point; watch carefully that tonal and chromatic effects have remained unchanged and in an exact and responsible way demonstrate his formulas of appearances in the strict order of perpetual awareness (c.f. The Evolution of Appearances, Chapter IV.)) If these precautions—the ritual of his craft—are observed, he will ultimately acquire the severe mental discipline necessary in the objective and dispassionate analysis of ocular phenomena. In contra-distinction to this purely scientific understanding of the great difficulty of painting there exists the popular misconception that art is produced as the result of an accident deriving from a mysterious physical and mental state loosely termed "inspiration"—a word which in general denotes a biological or physical accident outside of human control.

None of the great artists of the past, as witness their works and verbal statements, ever believed in this silly hypothesis. Whistler, in particular, had this to say. "Little do they know that this art is bound by laws as drastic and irremediable as the laws of the Medes and Persians".

. . . . .

Lesson Notes:

"Of all things painting is not done by chance. It is the science of human appearances and can only be learnt by scientific methods. Don't expect a miracle! Don't wait to be inspired otherwise you will lose much valuable time."

. . . . .

"Don't be the kind of painter that hurriedly turns canvases face to the wall when a visitor unexpectedly drops in. If you have worked for knowledge and don't expect your results to give more than you actually know, you will not be ashamed to let them be seen at any stage. Gambling is a waste of time in the pursuit of any knowledge and no one need ever be ashamed of having the honest mind which produces the honest result."

. . . . .

"Don't lose control of yourself. It is a big fight and you must meet it with confidence and composure. If the worst happens and you lose control put your palette down, stop work for a while and return to the battle refreshed."

Perceptivity and the Painter

As we have already remarked, it is necessary to think as a painter if we are to paint. This particular method of thought being difficult to describe verbally it will help us to arrive at some solution to the problem if we view it from all possible aspects. With this in mind the chart on pages 36 and 37 has been formulated.

As the reader will know, the different phases of the human mental processes have been listed under the terms, Sensation, Perception and Conception. In our chart the word "Perception" has been divided into two degrees, "Objective Perception"—"Subjective Perception" and this has been done the better to show the exact region to which the painter must confine his activities.*

The visible world as cognition starts for all of us, the painter included (except when he has the brush in hand) in Column III of the chart, Subjective Perception—the recognition of *things*—a mental activity giving awareness of *things* outside the mind —a consequence derived from Columns I and II in this order. This phase in the mental processes is called here Subjective Perception because the ability to name things depends upon previous life experiences. For example, a previous life experience stops us from plunging the hand into the visual phenomena which represents, in Subjective Perception, a fire. Note here, to make the statement clearer, that at a particular stage in childhood, which could be called advisedly the purely objective stage of life, the child through lack of experiences might put his hand into the fire and get burnt and note, also, for it is important, that to the painter as to the child the fire represents sensed visual phenomena.

But the average painter is not a child—he has lived the life of the average person and has travelled far from the automatic reception of sense stimuli. The experiences he has gone through have taken him far into the regions of Subjective Perceptions and Conceptions and herein lies his difficulty—the whole difficulty of painting. With brush in hand and with his adult mind he must learn to receive visual phenomena as a child and to hold himself consciously within this field of interest. This is only one way of saying that the accomplished painter must think like an intellectual adult and see nature as a child. His technical theories, therefore, derive from

* The chart has been devised as an attempt to describe the physical basis and province of the painter's activities. No other claim is made for it and if it succeeds in achieving this purpose it will have done all that is asked from it. The reader is requested to check up its application to all diagrams and illustrations found throughout this book.

Column III, they are subjective but they are designed to explain the visual stimuli which automatically bring about the perception of things. Indeed, the sole difficulty of the painter lies in the maintenance of this state of mental dualism.

During the long period of its maturation the human child is carefully guarded by its parents against the possible dangers of existence, this control only ceasing when they realize that it has progressed through a sufficient number and variety of experiences to enable it to control its environment. By the time it has arrived at this stage its progress in education has led it consecutively through all the physical states listed in the chart on pages 36 and 37, and it has become an integrated self-sufficient human being.

Column II. of the Chart, Objective Perception, is the recognition or awareness of visual phenomena not necessarily implying as yet the recognition or awareness of things—pure visual objectivity—sense data. The painter has learnt that it is not necessary, indeed that it is fatal, to allow his mind to stray into Column III. (the recognition of things), and the accomplished craftsman is one who has learnt that his work lies entirely in the activities described in Column II.

He has also learnt through his depictive demonstrations that the accurate statement of Objective Perceptions in themselves comport automatically what Leonardo called "the necessary effects." It is obvious that this selective condition of mind is a difficult one to conceive for the most of people, since cognition for them starts from the stage of Subjective Perception. If the layman is to understand the mental processes of the painter he must drift back from the *named-world* in which he lives to the state of mind which we are attempting to describe in Column II. Stated in another way, the selective or ulterior use of the eye is subjective, it comes from within and not from without; it is dependent on conditioned habits and local prejudices—it is not universal. The objective use of the eye comes from without, *entirely* through the organ of sight with no influence from any other sense organ. It is the first step in the mental development of human beings from inarticulate, instinctive sensations and the painter apart, it is a field almost entirely unexplored.

The known proficiency of the artist to externalize visual awareness and define and paint it in the cerebral order of apprehension (Column II) increases with practice until he is finally able to hold himself without effort within the prescribed bounds of his special problem. That this mental discipline is difficult to acquire

I. *Sensation*	*II.* *Objective Perception.*
Impression of visual phenomena on the organ of sight.	*Involuntary reception of visual phenomena, I.*
The source of the succeeding phases II, III, IV.	*Pure visual objectivity.*
	Appearances.
	Sense-data.
	The painter's subject-matter. His investigations end here, leaving III and IV as consequences.

III. *Subjective Perception.*	*IV.* *Conception.*
A mental activity giving awareness of things. *A derivative of I and II.* *The translation of combinations of appearances into the sphere of nameable concrete things.* [*The names of things may depend upon impressions received by more than one sense organ.*]	*A scheme, plan or sense of relationships among the objects of thought.* *Pure subjectivity. A consequence of I, II, III.* *A combination of percepts derived from II, and III and arranged to convey:* *A theory,* *A dogma,* *A hypothesis,* *A method,* *A possibility, etc.*

is obvious and in this respect the work of the great artists of the past shows clearly how slowly it was attained. Rembrandt's progress was so slow that we may safely say that if all that he painted in the latter half of his life was destroyed the remainder would not stamp him for what he is—an indispensable link in the whole progress of depictive science. Constable has this to say on this subject,

"There never was a boy painter, nor can there ever be, for the art requires a long apprenticeship, being mechanical as well as intellectual."

The Order of the Physical Awareness of Ocular Sensa

So far the factors, Tonal, Formal and Chromatic sensations, (Column I) which concern the eye and the activities of the painter have been considered as entities without any physical order of priority. It is time now to establish this order—to show why so much stress has been laid on the capital importance of tonal relationships and the difficulties surrounding the correct definitions and technical control of them. This is indeed a difficult task for the speed at which sense data is received by the eye and conveyed to the brain is so rapid that the average person can be excused for thinking that they all arrive simultaneously. Most people have no object in pursuing the study of ocular behaviour further than this. The scientist of appearances (the painter) cannot however rest satisfied with this rough and ready arrangement—convenient as it may be for the ordinary everyday purposes of life—since his practice has taught him that the success of his depictive experiments is in equal proportion to his recognition and acceptance of the hierarchy of ocular sensations. All this being noted let us say now that the first factor which concerns the eye is one of differences of lightness and darkness (tone). After this come feelings of forms and the sense of chromatic differences (we will have more to say about these two factors later on). This is the invariable order in which the eye registers sense data no matter what we may be looking at. We may diverge here for a moment to consider briefly the physical nature of the eye. A considerable amount of human energy is spent in the use of this organ, more than the most of people may have imagined. Research has been made by physiologists to determine the exact proportion of energy expended. The account of this is not the concern of this present treatise and the reader who may be interested is asked to consult standard text-books.* Let us note in passing that the muscular activities engaged in pulling the eye from right to left

* c.f., e.g., Starling's Principles of Human Physiology.

and up and down, the continuous readjustment of the iris to suit various *tonal keynotes,* and what the physiologists call "accommodation" goes on without cease from the time we open our eyes to the time we close them.

. . . . .

Lesson Note:

"Ocular sensations come to the brain in a strict order, but they come quickly and we must not forget that time periods where ocular phenomena are concerned are counted in fractions of seconds. It is just this which makes the art of painting so difficult. What has been done by the greatest painters is simply a record of visual facts registered by the eye within the space of a second, classified in their natures and laid down in their orders of priority."

. . . . .

We have said that the first ocular sensation is one of tonal distinctions and this must be so since the primary activity of the eye in viewing one effect of light and shade against another consists in the adjustment of the iris. Moreover, form cannot exist outside of its prerequisite tone nor can chromatic relationships exist independently. The order of the factors of form and colour is not invariable; although it may be said that in general formal sensations usually follow tonal sensations. As an example to the contrary, if we look at an even blue sky without clouds and their attached tonal differences, the eye, after having adjusted itself to the tonal keynote by constriction of the diaphragm, becomes immediately concerned with the chromatic sensation called blue. This succession, of course, is inevitable since no formal characteristics are there to claim attention. Now, the feeling of this order of priority whether mentally controlled or instinctive is seen clearly in the whole development of the art of depiction—its acceptance, conscious or unconscious, is the hall-mark of the master-craftsman.

The preceding statements will become clearer if we compare the approach and technical methods of the master in contrast to those of the inexpert painter. As a result of his experiences the master has become aware that he must deal with his sensations in the order of physical receptivity. Accordingly when he attacks his visual problems he will ask himself questions in a certain order.

He will begin by asking questions about the scheme in front of him; its relation to his pigmental assets in lightness and darkness; the keynote in which the extension is pitched and the number of tones required in the adequate description of the tonal system.

This done he has taken the first step. The next lies in the consideration of the forms which these tonal extensions should reveal. After this comes the factor to which he gives the most summary consideration, that of colour, for he has learnt that it contains no special difficulty only insofar as he might try to deal with it outside of its basis of tonal relationships. Acting in this way his thoughts are purely objective, subjective perceptions have been left out of his considerations as automatic derivatives. In contrast to the master the inexpert painter will demonstrate in his work his ignorance of the visual laws of cause and effect. In the main he will start his painting from the idea that formal characteristics are of primary interest and the most difficult to define. As a result he will start to *draw,* revealing his drawing by unstudied and irresponsible extensions of tone. Added to this he will generally fill his work with conventional symbols which have little or nothing to do with appearances and in this way produce a work which unlike that of the master fails to convey sensations of reality spontaneously. He will have produced a hybrid—the offspring of subjective and objective truths.

. . . . .

Lesson Note:

"Never touch your canvas without having a definite idea to express and a practical formula to express it with. Control your medium. Do not let it control you. See that you do this and stick to your canvas until it is done!"

. . . . .

The primary preoccupation of the majority of art students preventing them from painting objectively can be traced to the academies in which they received their educations. Generally speaking in these schools the student is taught that correct draughtmanship is the beginning and end of the craft of painting. (We have mentioned elsewhere how this idea was outdated). Due to the insistence on a secondary factor the student starts from a subjective basis. As a result of his education he—unlike the master—inverts the natural order of his sensations and begins to ask himself "What is the *shape*" of this or that. It is a truism to say, "We see what we want to see," nevertheless our concern as painters is entirely with what we do see and when we see it. The virginity of human ocular perceptions is, alas, only too easily deflowered by false methods of teaching. Bearing on this question of art training in schools where the emphasis is placed on drawing let us revert to Corot's statement

quoted on page 19 of the Introduction. Corot spoke there about his difficulties and used the words "drawing in the mass", words which simply mean the establishment of a few generalized tones. He spoke about the amount of time wasted, as a result of his early training, in the notation of small and unrelated formal characteristics showing indubitably in this way that up to the time of his act of revocation he was the issue of a system in which formal characteristics took first consideration. It is perhaps needless to add that from this point his work showed continuous improvement. Another form of false teaching comes from schools in which the emphasis is placed on colour. Students are taught that the main interest of the painter lies in the study of chromatic relationships. Brought up in this way they look for colour instead of allowing chromatic characteristics to precise themselves in the physical order of precedence. As in the case of the students who have been brought up to look for form, the results which they produce are, in another way, equally unconvincing for in the first case the student has been induced to want to see form and in the second to want to see colour.

Objectively, our interest can only be concerned with visual phenomena in the order of physical awareness. Subjectively, this interest may be one of many. Although we have already discussed some of these ulterior interests elsewhere in this book it is opportune to add here another particular instance of our use of subjective knowledge of things. We are prompted to search, let us say, for a *long* book and unconsciously look for it by its relative formal characteristics of "longness" (form); a *dark* covered book by its relative quality of "darkness" (tone) or a *red* book by its relative chromatic feeling of "redness" (colour). In each of these cases we set about our search from a self-imposed basis throwing overboard any attempt to recognize the book from its purely objective characteristics. Although *subjectively* our interest is with a red or a long or a dark book our eye will still behave *objectively* receiving its impressions in the physical order. In the three cases cited we have seen what we wanted to see and what we want to see, unfortunately, rarely coincides with what the eye will concern itself with if left to act objectively—i.e., if not dictated to.

To many people the preceding statements concerning the artist's field of research may not seem understandable for they may think that the reception of sense data and the perception of things is simultaneous. How then, it might be asked, is it possible for the painter to maintain himself within the former phase? The answer to this question can be best given if we describe the artist at work in con-

ditions which give him no time to stray from the field of pure objectivity (Column II).

Imagine a capable craftsman painting a landscape in disturbed atmospheric conditions where his subject-matter (tonal, formal and chromatic relationships) changes continually. In such conditions he has no time to waste; he must put all his energy into the definition and postulation of the visual phenomena before him. He has commenced to paint in clear bright sunlight; a cloud passes over the sun, he notes that his subject-matter has changed and he lays down his brushes to await the possible reappearance of something reasonably like the problem he had started to paint. He knows quite well that the same *objects* or *things* are there in front of him, but his trained brain tells him that they are revealed by different arrangements of visual factors. Unlike an untrained amateur, he waits, observing the flow and transformation of light, shade and colour—tense as a cat watching a mouse. Conditions change, the sun pops out again and once more he sees something approximately similar to the visual problem he had begun to analyse. His brain jumps to the attack—time is the essence of his contract and he can be interested in nothing else but his objective perceptions and the pigmental revelation of them on his canvas. Such is the manner in which a capable painter proceeds when working out-of-doors. He is only able to apply paint to canvas while the ocular proposition he desires to represent is before him. In the intervening spaces when the effect has changed he can do nothing but watch for the recurrence of his problem—a form of work as hard as the actual job of painting. Compelled to work in this way the painter can relax at the end of his work, view it and become aware for the first time of many of the *things* which his paint reveals automatically. He might begin to talk of a house, a tree, a cloud, where, up till then, his canvas was merely a testing ground for the relationships of tones, forms and colours.

Analysis and Definition from a Fixed Focussing Point

The development of the art of depiction has been characterized by an increasing knowledge of appearances accompanied by the abolition of symbols requiring translation. One of the most important additions to the stock of knowledge was made when the painter understood that if he wished to make his work more spontaneously understandable he must adopt a fixed focussing point from which to

view his subject. Reference to the Cro-Magnon, page 233, will help to demonstrate the exact meaning of the word "spontaneous" used here and also the usage which we make of the word "symbol." It will be understood also from this plate that in any highly evolved manifestation of depiction the artist had a fixed focussing point from which he made all his definitions. It follows then that if we wish to do full justice to pictures the responsibility is imposed upon us to *sense* them in the identical conditions under which the painter worked. To make this clearer we should understand that symbols, like the printed letter, can be read from many distances, whereas statements on appearances must be *felt* under the same conditions accepted by the painter. The reader must have observed that pictures principally composed of symbols occasioned no surprises when viewed at close quarters, where on the other hand, pictures which revealed spontaneously from a respectable distance feelings of reality, appeared when looked at close up and in parts a meaningless collection of daubs of paint. The reason for this is that the painter was trying to describe the feelings which he experienced within the human field of vision (no more, no less) when observing his subject from his adopted and fixed focussing point.

The human field of vision was defined approximately by Leonardo da Vinci when he laid it down that it was necessary to view any object at a distance of at least three times its height or breadth (whichever was the greater) in order to see or think of it as a unit, and not as a collection of unrelated parts. As a specific example of this statement, if we wish to see an object six feet high as a whole we must retreat to a distance of at least eighteen feet. Viewed from a greater distance, of course, it is more easily seen as a whole, the only difference being that certain details become more generalized. Mathematically stated, Leonardo's law proclaims that the known height or breadth of the object under observation must be multiplied by three and the sum represents the *minimum* focussing point at which it is possible to see and think about it in its fundamental quality of oneness. Roughly speaking, Leonardo's dictum and our use of the term "field of vision" denotes any "cut-off" in natural appearances in which the things (Column III) contained in it can be more or less readily named, as things, without shifting the eye. We say readily named, in general, for in reality not all the objects contained in this range can be named without some slight change in focus. These are exceptions, of course, but they in no way detract from the validity of this statement.

As a visual demonstration of some of the preceding statements compare "The Maids of Honour," by Velasquez, page 242, with the portrait by D'Arezzo, page 235. The latter picture observed at short range displays a wealth of detail not visible in "The Maids of Honour" from the same distance. Much of this fine detail could not be seen by the artist from the focussing point from which he could view his subject-matter as a unit. Insofar, therefore, as he wrote these details he was marking symbols based on his extra-ocular knowledge of them as things (Column III in the Chart, pages 36 and 37). No such conditions prevail in the Velasquez. Here the surface of the picture, although unintelligible at close quarters, becomes spontaneously real as we recede to the focussing point at which the artist painted it.

The same test cannot be applied to the D'Arezzo portrait, for as we see when we take up the position the artist must have had when he saw it as a whole the picture tends to "flatten out" and will not give back the realism of the Velasquez. It is of some interest here to note that Velasquez was the herald of a great advance in the history of depiction. He stands pre-eminent as one of the first artists in the world to proclaim complete faith in the objective analysis of visual phenomena as a means of conveying sensations of reality.

Visual statements on canvas which convey sensations of reality spontaneously are definitions of the appearances of objects as seen by human beings at a certain fixed distance. That being so we must understand that it is not possible to receive from a picture a vivid sense of reality requiring no translation unless that work is viewed from its correct focussing point. The painter accordingly accepts the conditions of his task and settles down to do no more or less than what concerns his eye, knowing all the time that many things are detailed when he views his subject nearer and within a more restricted area. Consider as an example, the portrayal of a distant mountain in its relation to foreground and middle distance. It is seen as a flat mass of a certain tone and colour and has to be painted as seen in order to convey the sense of a mountain which, if seen as such, must have been viewed from a long distance. (See page 56, "Olinda Falls Road").

The law of appearances governing the sense of distance is that extensions of lightness and darkness (tonal relationships) on objects diminish as they recede from the eye to merge finally at a certain distance.

At this point distances cannot be measured by the human

machine. They must be calculated in an abstract way and accepted theoretically, e.g., astronomical calculations on the distance of any of the stars, planets, or comets.

That well known source of wonderment, the portrait in which the eyes follow the observer from any angle of vision, is but another example of a work of depiction being an illusion under a fixed condition. The artist has only painted a sitter who was looking directly at him, with the inevitable result that his painting being a fixed document on appearances cannot change, whereas the real model would have been revealed in different ways from different points. The deception practised on the observer's mind is all the more successful in ratio with the correctness of the painter's objective statements (see Frontispiece, a Self-portrait where the painter had to look at his own reflection).

To recapitulate, it must be noted that true depictive statements cannot behave like reality. Their value and educational interest is linked with the artist's practical work within his imposed limitations and it is of no use whatsoever to view his work outside of these frontier-lines. (It can be viewed from *outside* of his focussing point, for in this case the picture will only generalize itself while still remaining, within a reasonable distance, real and comprehensible. *Inside* of this point, for the reasons stated, it will only become incapable of making itself understandable except as patches of paint lighter and darker). It cannot be repeated too often that a work of depiction is only an illusion under a fixed condition; it cannot behave like nature herself and to ask it to conform to the same exactions is to ask of it a physical impossibility. To ask this of a picture would be as ridiculous as to go to the back of a portrait in order to view the other side of the sitter's head. Although this example might strike the reader as exaggerated it is only the *reductio ad absurdum* of the methods employed by people who wish to read pictures in detail and not to feel them as units. Rembrandt, annoyed by his "microscopic" critics, in particular his women clients, sought to deter them from misjudging his efforts by saying, "Do not go too near to the picture, the smell of the paint is not agreeable and is bad for the complexion". It is perhaps needless to add that Rembrandt's difficult critics are still with us and will remain so until every art interested person makes an honest and sincere endeavour to understand what the artist is doing and to accord him at least the courtesy of learning the elementary rules of the craft.

Means to an End

In the practice of any craft or science methods exist whereby the practitioner or student can more readily guard himself against certain ever present hazards and at the same time adopt procedures which ensure a definite degree of result.

The studies and technical experiments of the painter have been designed to lead all the time to a greater knowledge of the visually objective facts on which alone the illusion of reality can be constructed and any methods which might help him to extract a residuum of objective truths from a muddle of data collected by sense organs other than that of sight should be adopted.

Various methods of straightening out this almost inextricable tangle of extra-ocular sense impressions exist, one of the simplest being the device of partly closing the eyes. This has the effect of revealing the changes taking place in the subject-matter and allowing the order and degree in which these changes operate to be seen. The method is, of course, only a means to an end, and is only valuable as such, but it assists in the recognition of the complete difference between visual theories and conventions as against the actual facts which concern the painter. Another device with a similar aim is the separation by *duration of observation* of the orders and degrees of cerebral awareness of visual phenomena. This is to say, the painter allows himself varying separate fractions of seconds to observe his subject-matter many times so that he may finally determine what happens under these altering conditions. If his work happens to be in an elementary condition (the scaffolding stage) he may content himself with glimpsing rapidly his subject-matter, for the smaller details which become apprehended by the brain in the space of one second are necessarily more complicated than the impressions concerning the eye in the duration of one half of a second. If the artist's work is in an elementary state peering for a long time at his subject will only have the effect of confusing his mind by diverting it from the consideration of clamant characteristics to small details which do not concern his immediate job.

. . . . .

Lesson Notes:

"To look long and intently will not help you to determine first impressions. Rather, take a succession of hasty glimpses until you can define what happens to your eye under such conditions."

. . . . .

"You feel that your work is beginning to look empty and monotonous and what you feel is always right no matter how it may upset your theories. Here is the reason why your work feels monotonous. *You have forgotten that every addition to your work must be checked up under the same conditions in which you made your definitions.* You have looked at your work through half closed eyes and made up your mind to make certain alterations on your canvas; you have made these alterations, returned to your focussing point and checked up the result with your eyes *wide open.* You have therefore not painted and viewed your result under the same conditions. You see, what happens in a case like this is that we generalize areas which, with the eyes wide open, contain slight tonal variations. We call such areas, viewed under these conditions, flat tones and proceed with open eyes to paint them as such, in spite of the fact that they appear to lack the elasticity seen in the actual subject-matter. What you must do if you have made definitions with half closed eyes is to check them up under the same conditions. This done, when you open your eyes you will find that the particular part in question which was generalized as a simple tone, will under the new conditions appear more subtle and varied. After all, you are not painting parts of nature as seen through half closed eyes. This method of procedure is only a means to an end to enable you to deal with visual phenomena in the order of the obvious, but it is an unsure method for you will forget from time to time to view your work under similar conditions. A better method to find out the order in which you see things is to use dark glasses, for with them it will be easy for you to think of it in a more elementary condition; to paint what you think you see; to choose the colour of tones desired and to view the result under similar conditions. But never forget for an instant that the half closing of the eyes or the use of dark glasses is only a means to an end and that in the final analysis whatever you do will be evaluated by yourself and others in the normal way."

. . . . .

Many other methods of defining the cerebral order of awareness of visual phenomena exist: dark glasses of varying degrees of density, use of a small hand mirror to view the painting upside down or reversed from right to left—to name only two. The use of the small hand mirror is specially instructive, for since it is in our nature to become used to and to tolerate mistakes, the sudden reversal, upside down or sideways, surprises us, puts us back for the time being into the objective state of mind which immediately links itself with inarticulate sensation thus enabling us to diagnoze with certainty the mistakes to which we had become inured.

Of the devices mentioned, the most practical and certain is the use of dark glasses of varying degrees of density. The least trustworthy is the method of partially closing down the eyes. While not denying its usefulness, the reason for the lack of confidence in the latter method had best be explained. Experience in the art of analysing and gradually building up visual impressions in the order

of the obvious (cerebral awareness) forces us to adopt completely scientific methods of observation and thought. The conscious checking up of the success or failure of pigmental demonstrations of our definitions must as we have said be made under the *same conditions* which engendered them, but by the method of partially closing and opening the eyes exact conditions are unfortunately difficult, if not impossible, to stabilize. This difficulty does not arise when the dark glasses are used, for whatever the degree of density of the glasses employed at a certain stage, the painter may make his definitions, view his palette, paint on his canvas and check up his result under unaltered conditions. Dark glasses definitely enable us to define orders and qualities in the cerebral awareness of visual phenomena with scientific accuracy and incidentally, at leisure if the subject-matter permits.

Although any part of nature seen through very dark glasses is necessarily more generalized than when seen through light glasses or with the naked eye, what is seen can always be painted, and no stage in the building up of ocular phenomena from simplicity to complexity is too elementary to form a basis for what is to come. Moreover, at whatever stage the subject is viewed it always conveys the sense of "oneness", the sense of being complete. Considered in this respect there is a job always waiting within the power of any student. If he be humble enough to be satisfied to start at the beginning of his visual sensations, to *work for knowledge, irrespective of pictorial result,* he will always attain his objective. It is clearly better in painting, as in all other things, to achieve something, however little, than to attempt more and fail.

It has been argued that since dark glasses must always change in some degree the *colour relationships,* that the whole colour scheme of a painting would be affected. In actual practice these objections are soon disproved. In reality what happens here is not a change of colour relationships but a change of the basis on which these relationships are established. As in tonal relationships wherein a change of keynote alters the basis without necessarily changing the relationships, a change of a colour basis acts in a similar manner. These statements on the difference between relationships and their bases may seem obscure to the reader but they can be explained in this way. Let us imagine that a painter has chosen to view his subject through dark glasses with a reddish tinge. Two changes have become apparent: the tonal keynote has changed and colour relationships start from a redder basis. Nevertheless, he will paint his picture in the same way that he would paint it without the glasses.

He will observe his subject, note the colour relationships and *under the same conditions choose,* as far as possible, similar colours from his palette. He will then place these colours on his canvas and view his result in its relation to his subject-matter. Proceeding in this way and his picture being finished, he will then take off the glasses and view his work in relation to the subject-matter for the first time with the naked eye. What would he find there? He will find that he had painted his picture with exactly the same colours that he would have used had he not had the glasses on. The point to be emphasized here is that *he has viewed his subject-matter, chosen his colours and compared his painting with its theme in similar conditions.* If, on the other hand, he had observed his subject-matter through the glasses, chosen apparently similar colours from his palette with the naked eye, checked up his work once again through the glasses, his work would be chromatically chaotic. Indeed, he would not get very far, for he would have undertaken a task which was physically impossible. Most of us have had occasion some time or another to don dark glasses and have kept them on long enough to make us forget that we were wearing them. The reason for this is a simple one. We have got past the initial surprise caused by the change of basis and the colour relationships have re-established themselves so accurately that we derive through them the same visual data as before. Through dark glasses relationships, as seen by the naked eye, re-establish themselves more or less quickly according to the extent of the change of the basis. In this way colour relationships through neutral coloured glasses recover themselves quickly; through bright red glasses more time would be required although eventually the new basis of relationship would be accepted.

. . . . .

Lesson Notes:

"If colour is seen through dark glasses two things happen. Firstly: a generalization of the smaller formal and tonal characteristics and secondly, according to the glasses used, a change in the basis of colour relationships. The glasses must be used continually throughout the whole process—the tonal and colour characteristics must be chosen from the palette and the result viewed under the same conditions. In this way you will find that your tonal and chromatic relationships will remain constant just as they would had you not had glasses on. If, on the other hand, the subject is viewed through the glasses and the paint chosen from the palette and placed on the canvas without the glasses the result would be complete depictive chaos."

. . . . .

Suspect your theories until they have been visually demonstrated many times.

The road to knowledge, particularly in the province of appearances, is strewn with the corpses of barren theories."

The Objective Standard of Criticism

From the objective standard of criticism shapes, chromatic and tonal relationships are of equal difficulty if we exact from them equal degrees of accuracy. Thus to draw by an abstract line a circle or a square and to exact equal perfection from them would mean an equal difficulty in both cases. Also problems of tonal extensions and chromatic relationships, whether they form parts in the painting of a head or a tree, are again, equally easy or difficult according to the standard of criticism. Let us add that from the purely objective visual outlook all of the factors concerning visual phenomena possess an equal interest and it is this all round interest which makes the finished craftsman bestow, in the order of cerebral awareness, an equal amount of study on all the factors contained in his particular problem. It is because of this catholic attitude that his work gives back automatically sensations of reality which do not require the artificial aid of conventional symbols.

In the general use of the eye, which it will be remembered we have already classed as the "ulterior" use of that organ, actual objects or things with which we are well acquainted are submitted unconsciously to a test commensurate with our knowledge of them. We may imagine that a head is more difficult to paint than a tree and in reality it does become so, because we have unconsciously changed our objective standard of criticism and have allowed subjective theories to intrude into the objective world of appearances. As a result we unwittingly exact more accuracy of visual demonstration from the head than from the tree because we are much more interested in the visual characteristics of our own species than we are in the equally definite characteristics of trees.

The case of Henry Raeburn is a good example of subjective criticism of foreign interests imposed on objective statements. This great Scotch portrait painter was said to paint his men sitters much better than his women. Today, of course, with the perspective of time to aid us we can clearly see that such strictures have little connection with the true development of painting. It is manifestly absurd to imagine that a scientist of the calibre of a Raeburn would intersperse his splendid portraits of men with mediocre portraits of women. He gave us equally fine interpretations of women, each one marking a well defined type and painted with the same skill as his portraits of men. Psychologically, the rea-

son for this curious preference for Raeburn's portraits of men may be found in the instinctive and universal wish to idealize woman. Acting on this instinct the critics responsible for the dissemination of this silly opinion were unconsciously quarrelling with Raeburn because he did not etherialize (i.e. retouch) his portraits of women. Raeburn was a true artist and a great craftsman, his reputation and the appreciation of his work has outlived all criticisms based on subjective preferences. To him, with paint brush in hand his women sitters were as his men sitters—a set of patches, a scheme of visual phenomena in tonal, formal and chromatic relationships and in both cases the degree of his knowledge of appearances was expressed equally well. (See page 240, Scott-Moncrieff).

We have sufficiently discussed the special methods of thought imposed on the painter by the special nature of his job and it follows as a matter of course that he must find special words to assist him to talk to himself (or to others if he happens to be a teacher) about the factors with which he deals. As already pointed out expressions already in use afford little practical aid. Because of this poverty of verbal equivalents the vocabulary of standard terms is so limited and so inadequate that each painter has been forced to invent his own language. Particularly significant in this respect is the fact that the more accomplished the practitioners the more simple are the terms they adopt. It is the amateurs in art who are prone to use the flamboyant, vague terms which unfortunately clutter up so much of the discussions on art. From the life of John Constable by C. R. Leslie we cull this example illustrating the difference between the language of the amateur and the practitioner.

"The amiable but eccentric Blake looking through one of Constable's sketch-books said of a beautiful drawing of an avenue of fir trees on Hampstead Heath, 'Why, this is not drawing but inspiration', and he (Constable) replied, 'I never knew it before, I meant it for drawing'."

Note that while the amateur uses the word "inspiration" the consummate artist is satisfied with the more prosaic word "drawing."

The necessity for a special vocabulary being admitted, certain words will be used in this treatise which will be understood only by reference to our diagrams. These terms are purely arbitrary and personal—after all words have no value in themselves, they have value only in relation to sensorial experiences. "What's in a name ....."—a tone or colour would remain exactly the same whatever we might call it.

The student should memorize these terms, the choice of them is

the result of long experience and they have been adopted as the best verbal symbols to describe sensations derived through the organ of sight.

Light and Dark Disturbances

Diagram 24, page 53 has been made to illustrate the application of the words "light disturbance" and "dark disturbance"—terms which will be used throughout this book to describe light phenomena. The large dark area in the bottom half of the diagram represents a dark disturbance, so called because of its immediacy as such. In the upper half of the diagram approximately the same shape is called a light disturbance for the same reason. In the bottom right hand corners of both halves of the diagram will be found light and dark disturbances which by relationship with the other two disturbances already referred to will be called *minor disturbances.* We have, therefore, on this diagram *major* and *minor* dark and light disturbances. These disturbances are invariable in *quality* (tonal contrast) ; they are therefore *elementary* and as such are monotonous. In considering the quality of forms an interesting and practical analogy can be made between them and a track in a forest. A track in a forest is infinitely varied; at one part it is well blazed and we walk along it surely and quickly; at another it is less clearly marked and we slow up instinctively to make sure of the path. Further on again it has become overgrown with vegetation and we stop momentarily searching for traces of it. Having found certain indications which tell us where the track was formerly well-marked we proceed cautiously and if we have not lost ourselves through reckless speed we suddenly with a sigh of relief come across another part sufficiently well marked to enable us to move more quickly.

Now, as we have said, the tracks for the eye in diagram 24 are elementary in quality—equally well blazed at all parts, but this is not true of the visual tracks (forms) which nature presents to us. Natural forms show, like the tracks of the forest, infinite variations of form more or less clearly evident. The words "quality of form" or "variety of form" are used to express these variations and diagram 26, page 55 will graphically explain the usage made of them. Being complex rather than elementary the forms in this diagram have a greater affinity with the forms of nature. Observe this diagram with half closed eyes and perceive a light disturbance of an irregular shape more or less well blazed and *eye-compelling* at different places.

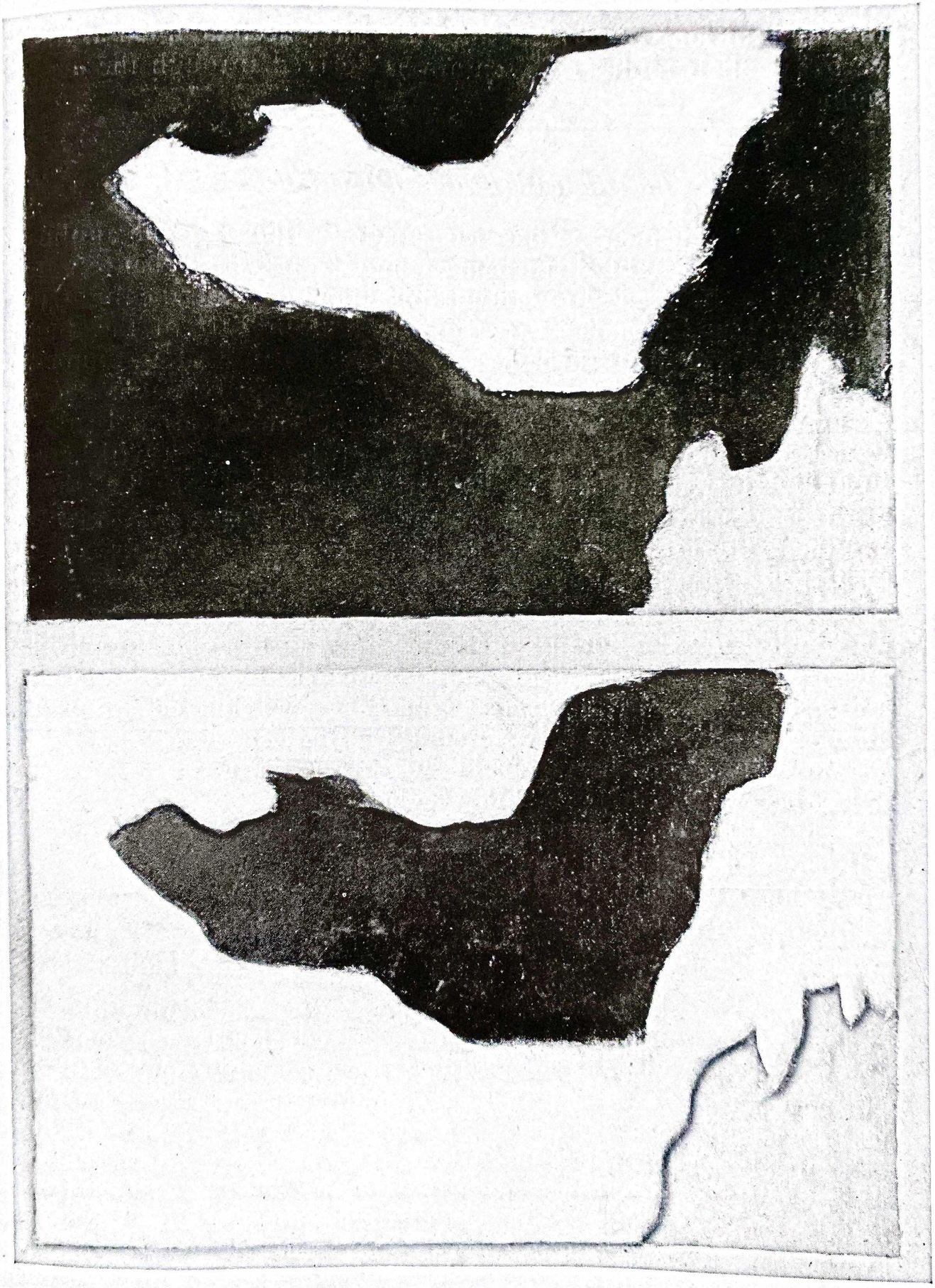
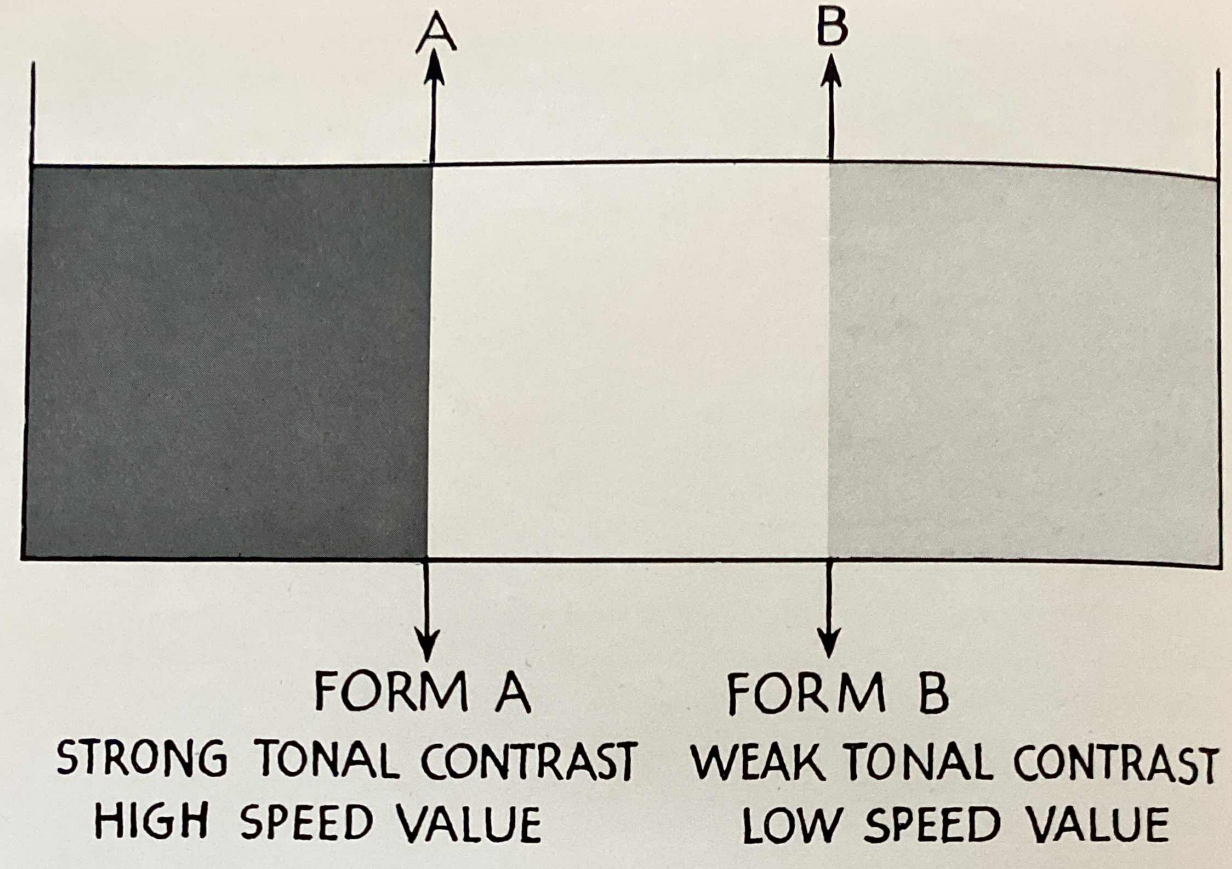


DIAGRAM 24. MAJOR AND MINOR DARK AND LIGHT DISTURBANCES.



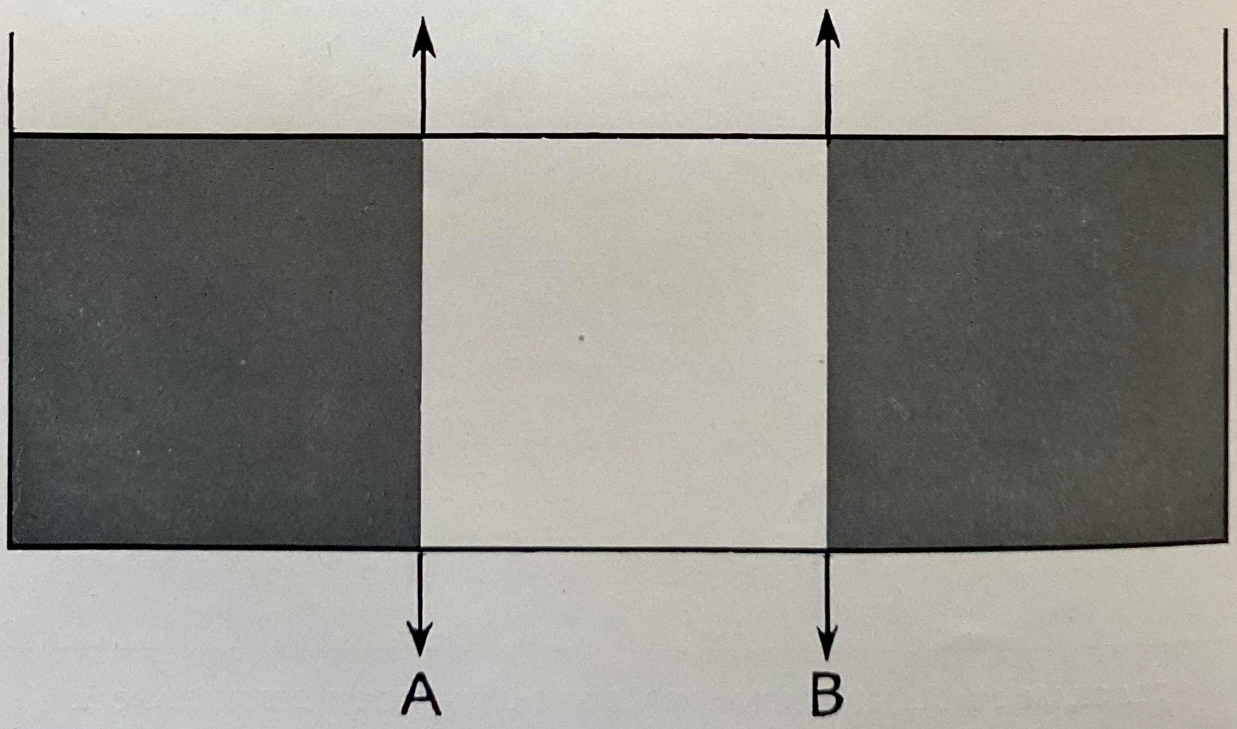


DIAGRAM 25. SPEED VALUES OF FORMS.

DIAGRAM 26. COMPLEX LIGHT DISTURBANCE

PLATE 27

"OLINDA FALLS ROAD"
(Painted 1932)

MAX MELDRUM

Speed Values of Form

A new term now becomes necessary if we are to describe more definitely the relative sensations deriving from natural forms and which have been loosely described by the terms "quality of form" and "variety of form."

At the top of diagram 25, page 54, there are three squares in three different tones with the darkest on the left hand side and the intermediate on the right hand side. It will be seen that form A is more eye-compelling, better blazed than form B. This is because A is revealed by a greater extension in lightness and darkness creating a greater claim on the eye. The lower portion of the diagram shows three squares and two tones, i.e., two forms having an equal degree of eye attracting qualities. Hold the eye in the centre of the middle square and the equal pull of the forms A and B will be sensed. If the same experiment is played on the upper part of this diagram the pull of the eye towards form A will be strongly felt. These more or less imperious appeals to the eye will be described hereinafter by the term "speed value." For the student it is important, indeed, it is the whole thing in itself that he should give some thought to the forms with which he has to deal when he has to paint natural forms in their relative speed values, for if these are classified and stated correctly the same stimuli will be reproduced automatically from his canvas by equivalent extensions in paint. Furnished with this new term "speed value," re-examine diagram 26. If we consider this light disturbance as a track in the forest, as such, it would be better blazed in its left hand top corner than it would be lower down towards the centre of the diagram. About one-third up from the bottom of the diagram the track becomes even more confused and the eye hesitates, feeling its way until it gradully emerges from this state of ocular uncertainty to meet the better marked track leading towards the right hand bottom corner. From this point it creeps up along the boundary of the disturbance with varying degrees of certainty and uncertainty to finally join at its point of departure. Analysed now from the unique standard of ocular behaviour the parts of this journey present varying degrees of ocular speed value. The highest speed value of this form is found at the top left hand corner, in the middle it has a lower speed value and lower still it has so little speed value as to be almost indiscernible as a form. And so it proceeds. The reader can be left the exercise of making the analysis and classification of the remainder of the form for himself.

As the moth is drawn by an invincible power to the vicinity of

the greatest extension between light and dark, so does the human eye act in like manner.

. . . . .

Lesson Notes:

"Like the wanderer in a trackless forest the eye is lost in the middle of a flat tone. Paint a large space in the middle of a canvas with an even tone and see how difficult it is to keep the eye on an imaginary point near the centre. Relax the mind for an instant and it will take advantage of your inattention to scramble to the nearest form. Vary the tones round the border of this area and you will discover that the haven of refuge chosen by the eye will be that part which presents the greatest tonal contrast."

. . . . .

"A painted canvas reflects reality insofar as it conducts the eye in the same directions and at the same speeds as it is conducted in the actual subject-matter. It is fatal to dictate to the eye. Try to relax and let it go where it wants to. Be you the obedient little dog—let it be the master."

. . . . .

"The painter is at the same time the servant and master of the eye. He is the willing servant when he asks how it is affected by exterior nature. He is the master when he puts his brush to canvas and compels it to obey his commands."

. . . . .

"A bad picture is one which claims attention at a number of places at the same time—nature never does this."

. . . . .

"Like a blind man following his dog allow the eye to go where it will—it knows best. Don't try to see things—let them reveal themselves."

Analysis of Form

Up to the present we have been discussing in this chapter definitions of terms which deal with tonal relationships alone. We must now consider some of the methods of analysis used by the painter in the consideration of *formal* characteristics. Diagram 28 on page 59 is an abstract form which could be revealed as a dark disturbance by filling it in with a dark tone or as a light disturbance by surrounding it with a dark tone. Being of an irregular shape it is more like the shapes found in nature than if it were regular. Leaving aside its irregularities it gives us first a general sense of inclination which could be revealed by a long oblong shape lying approximately at an angle of 45°. In actual practice the painter might start from this rectangle and having defined accurately its angle of inclination proceed to irregularize it. He might chop off or add a kink or a protuberance on its top side to find the sense of the inclination had changed slightly. In order therefore to restore the exactitude of the angle of inclination given by the simple rectangle he would find it necessary to subtract or add an equal amount on the lower side. Proceeding in this careful,

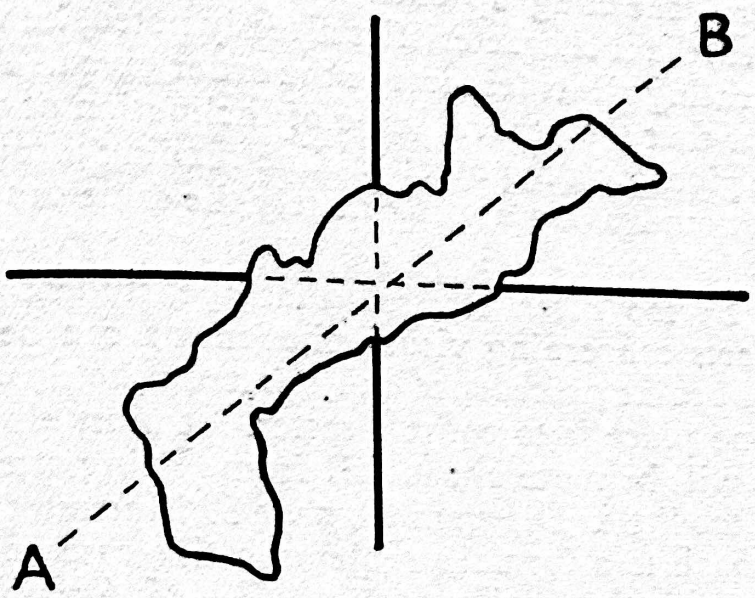


DIAGRAM 28. GENERALIZED INCLINATION OF AN IRREGULAR FORM.

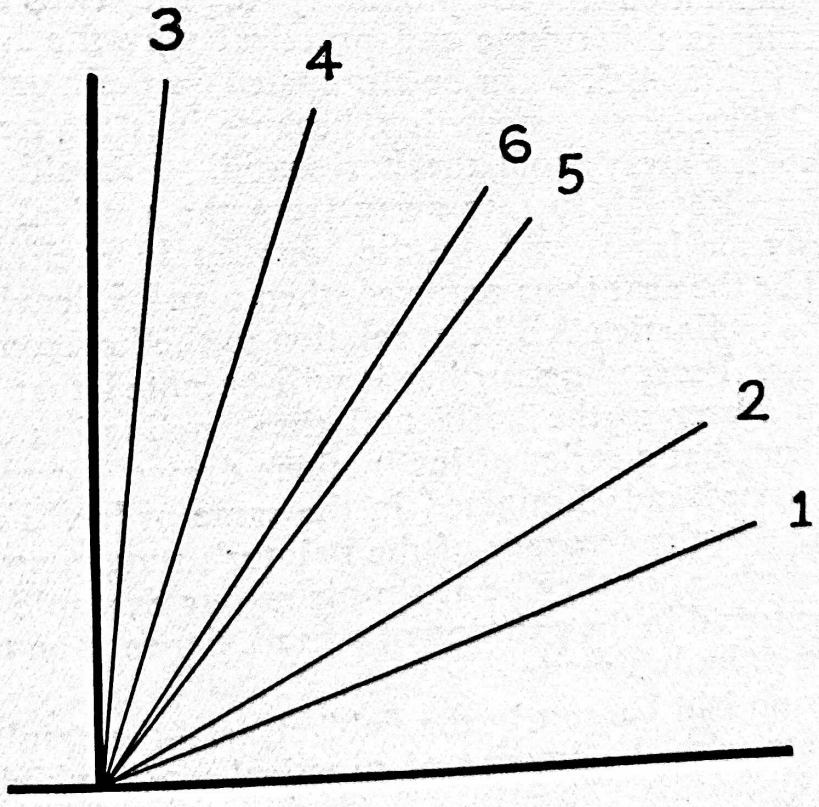


DIAGRAM 29. EXPERIMENTS IN THE DEFINITION OF AN INCLINATION.

responsible way, checking up each addition to see that it had not destroyed the cardinal characteristics already noted, he would finally succeed in revealing all its features in the order given. This achieved he would know that the general sense of inclination of the irregular form could be given by a hypothetical line running through the form from top to bottom leaving approximately the same superficial areas on both sides.

It cannot be too often stressed that the student must hasten slowly. The facts concerning visual phenomena can be solved only in the order of ocular precedence and to attempt to do everything at once and at one place is to court disaster. It must also be remembered that we will be more apt to fail from having attempted to do too much than too little. Diagram 29, page 59 illustrates the painter's cautious approach to a formal problem, in this case one of inclination. Let us imagine that inclinations 1, 2, 3, 4, 5, 6 represent a series of experiments to determine the angle of inclination AB in diagram 28. Inclinations can always be checked up definitely and accurately from vertical or horizontal bases for feelings of horizontality or verticality are contained within us as part of our machinery and are fixed. This being so the painter will always adopt the easy method of comparing an inclination in its proximity to the two fixed bases stated. Starting in this simple and practical way the hypothetical experiments 1, 2, 3, 4, 5, 6 can be eliminated in their orders of dissimilarity. 3 therefore goes out first, because it is too near the vertical and too far away from the horizontal. 4 would be eliminated next, for although further away from the vertical inclination it is obviously too far away from the horizontal. Inclination number 1 would be the next to be removed, then 6 and 5, leaving 2 as the nearest to the inclination AB in its relation to the horizontal and the perpendicular. Proceeding further it will be noted that inclination 2 is slightly nearer to the horizontal than inclination AB, but it will be evident that a series of inclinations drawn between 2 and 5 could be analysed and eliminated in the same order. From this it will be clear that the accuracy of the painter's statements about any of his factors, whether they be as simple as our example or as complex as those found in the painting of a head, depends on the number of experiments he has made.

There is no bad harvest in the field of art—the result is always commensurate with the amount of practical work which has been put into it.

The job for the student is to find out what the words "practical work" mean.

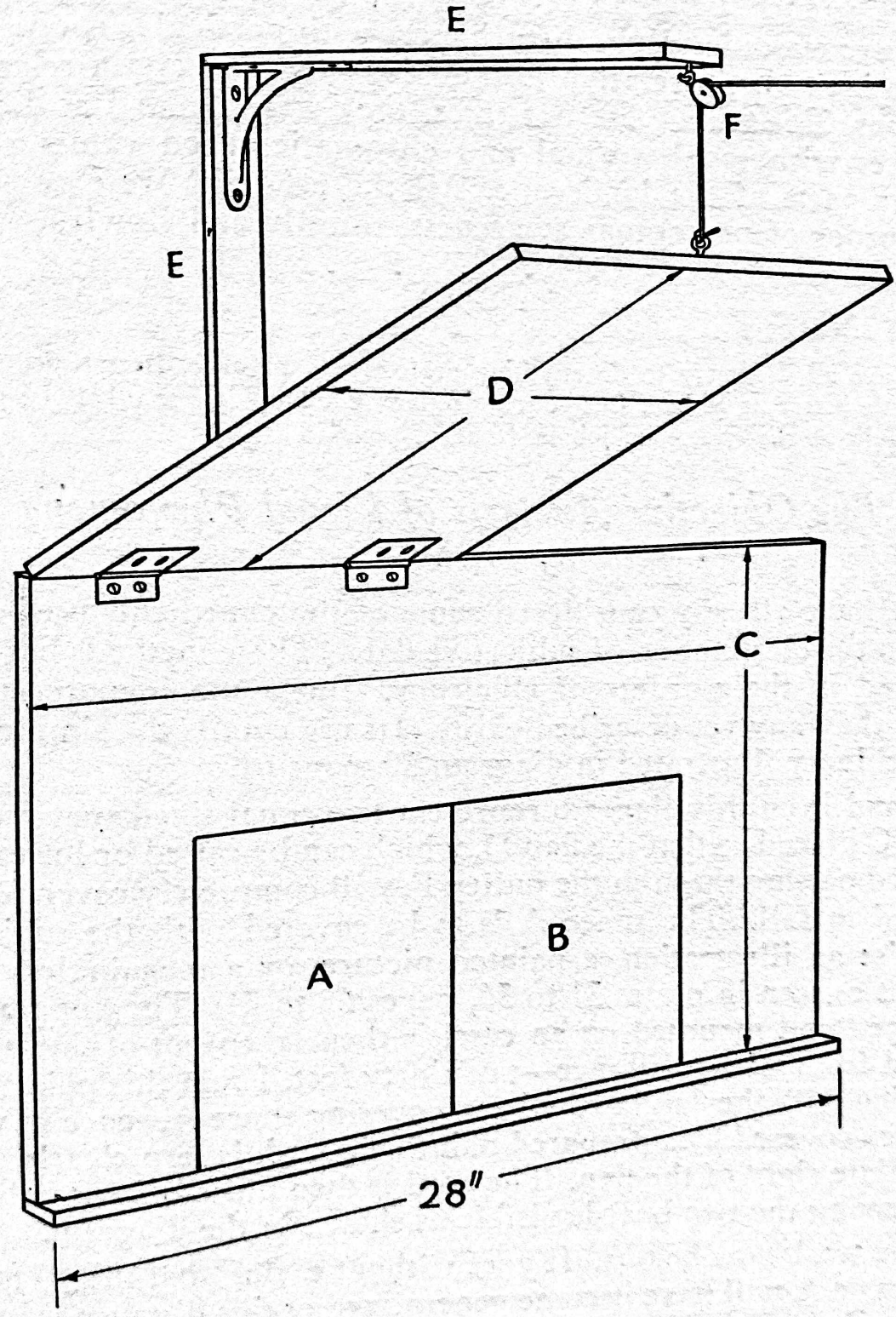


DIAGRAM 30. APPARATUS FOR THE ANALYSIS OF VISUAL PHENOMENA BY DISTANCE.

Consider as an actual application of the principles under review to the *natural* problems which require solution in the painting of a picture, plate 27, page 56. Here we may see how the various problems imposed by the subject-matter have been solved by the same slow but sure methods described in the analysis of diagrams 28 and 29. For instance, what we accept as the representation of telegraph poles were classed as light disturbances with particular speed values, definite breadths in relation to their heights and certain relative inclinations. The trees were not trees, they were defined as dark disturbances with tonal, formal and chromatic speed values relative to other parts of the landscape. All these factors were considered in the order of perceptual awareness, timidly and slowly.

. . . . .

Lesson Note:

"Above all don't try to do anything perfectly all at once. Be satisfied to do it just a little better at a time. Let your objective be a humble one otherwise you will surely baulk at the enormous job in front of you."

The Objective Analysis of Visual Phenomena by Distance

We have already considered some of the expedients used by the artist in the elimination of subjective data. These methods have been classified in their orders of efficiency. But a much more efficient system than any yet described exists. Its use entails the simple piece of machinery illustrated in diagram 30, page 61.

A and B on this diagram represent two equal sized spaces on the board C placed so that the flap D, which can be raised or lowered by the cord passing through the pulley F, will completely cover A when allowed to fall. The space A is to be covered with the subject of analysis: an illustration, a painted picture, or a meaningless set of patches as seen in plates 31 to 36, pages 69 to 74. The apparatus so equipped and mounted on an easel is then taken out-of-doors to be viewed from a long distance—say ninety feet. From this point of observation with the flap lowered and covering space A, space B, which has been covered by a prepared painting board, is seen clearly on the immediate right of the flap. The cord is then pulled, raising the flap and leaving the two boards visible as shown in the diagram.

The work now begins. It goes without saying that the picture or patches on A will have become generalized at this distance. Much of the detail seen at shorter distances now plays no part in the problem.

In distinction to the expedients described in the analysis of visual

phenomena from a fixed focussing point (page 42), this new system permits the use of a variable focussing point. As a method it can be called *the separation of the orders and degrees of visual phenomena by distance* and as such it has the great advantage of allowing this process of analysis to be made in a leisurely and responsible way. Note, however, that it can only be employed in the analysis of visual phenomena emanating from a flat surface, for in all three dimensional subject-matter characteristics vary with each different focussing point. The classification of visual phenomena by distance is a method of study well within the power of any beginner, since it is completely controllable by the exercise of a simple ritual, —the observation of the subject of analysis under easily maintained conditions.

It is an easy and practical method which does not ask too much from the student all at once and will teach him progressively the mental and technical discipline of the art and craft of painting. This is important, for many beginners fail to achieve any progress in painting actual things because they have not learnt to take all the possible precautions—precautions which a master has learnt to take by hard experience and many setbacks. These depictive five-finger exercises will, if persisted in, produce results. Through them the student will acquire the firm conviction that if he can learn the order in which his brain becomes aware of visual phenomena the illusion of things will then derive automatically. Armed with this faith he will be able to study objectively ocular problems in which speed of definition is necessary and subjective perceptions and conceptions will no longer have the power to divert him from the true nature of his job. As a further aid his progress will be hastened if he gets someone else to choose the illustration placed on space A. In this way he can see his subject-matter for the first time at a distance of ninety feet devoid of all the details which might have been seen at shorter distances but which would have warped his ideas about what he actually saw at the longer distance. In addition to this, if the subject chosen happens to be an illustration of things it will help to maintain the virginity of his definitions if it is turned upside down.

We have now arrived at the field of action where, with palette in hand, we pull the cord to see for the first time the subject of analysis from the distance of ninety feet. The first process is to observe it unhurriedly and the second to begin to talk to ourselves about the visual phenomena before us. We note the obvious visual characteristics and proceed to construct a pigmental formula for application to board B. Once this has been done the flap D is allowed to fall,

leaving B again alone visible. We then approach the easel to apply this formula. This done we return to the focussing point at which the formula was devised, to uncover the flap and compare the two boards. Insofar as spaces A and B have advanced a step towards visual similarity the degree of the success of our mental and technical formulas can then be gauged. No matter how inexperienced we may be as painters it will not be long before we succeed in making A and B interchangeable at such a long distance. This achievement marks the completion of the task from our chosen focussing point. Job number one is, therefore, done, and job number two presents itself.

Holding the flap open we then, with the definite knowledge of what we saw at ninety feet, move slowly forward, stopping when interchangeability between A and B ceases; where smaller details (minor visual characteristics) become noticeable in A. A new stage in this particular process of analysis is now reached. We have arrived at the new focussing point, the new problem is before us and the same processes employed successfully at our first focussing point are again used. Differences are noted, talked about in the simplest language possible and an easy technical method devised. The result of these deliberations is transferred to the board B and inasmuch as it is successful, leads to the next step or focussing point. If, of course, feelings of interchangeability between A and B do not as yet exist we must stay at this second focussing point until they do. Once this has been done note carefully that feelings of interchangeability felt at the distance of ninety feet are now felt up to a shorter distance, say seventy feet, i.e. focussing point two, and that these feelings can be sensed from stage two back to stage one. Enough has been said now to show how the student may in a leisurely fashion analyse objective visual phenomena with this apparatus from a long distance up to any nearer distance within the human field of vision.

Briefly resumed the system may be laid down thus:

1. The choice of a definite focussing point from which the object of analysis A is viewed for the first time in comparison with B. Focussing point number 1.
2. The attainment of complete interchangeability at focussing point number 1.
3. The slow, careful approach to the objects of comparison AB.
4. The halt at the point where A and B are no longer interchangeable—*the second focussing point.*

5. The repetition of these actions up to the focussing point desired.

If we consider Leonardo's approximate law governing the human field of appearances, in what way does this rule define the ultimate focussing point in this experiment? If, for example, the largest dimension of A and B combined be one foot, then the ultimate focussing point is 3 feet ($3 \times 1 = 3$). It is useless to move in nearer than this, for if we do so A will cease to be felt as a unity and any endeavour to push past this physically imposed limitation will only discover for us that while the picture B may look more advanced in the smaller parts seen within this ultimate limit of 3 feet, it would have lost the feeling of complete interchangeability which it had contained at longer distances.

The method of subdividing the order of the obvious by distance is, it must be remembered, like any other technical expedient, only a means to an end and only successful insofar as it obtains results. It is a specialized method designed to inculcate the completely objective state of mind and is a practical one for the raw student in that speed of eye which is necessary in the analysis of all subject-matter containing the third-dimension is not called for. Constant practice with the apparatus will develop a progressive rate of speed, ultimately enabling the student to cope with all the added difficulties inherent in three-dimensional subject-matter, in moving objects (portraits) and in the fugitive effects of light and shade in landscape.

All the different focussing points adopted in the analysis by distance can be considered as marking progressive stages of mental control of visual phenomena as far as they have been progressively interchangeable, for it is clearly obvious that such a method is under definite control at all stages and is not one of mere trial and error.

. . . . .

Lesson Note:

"You ask what is the use of trying out all these experiments which do not produce pictures? Do them and discover for yourself. In any case, if you are not interested in using your eye for the mere pleasure of using it you will certainly never be a painter."

The Set of Patches

The plates 31 to 36, pages 69 to 74 are shown to describe in actual practice the working-out of the method of analysis by distance. On the left hand side of each pair of diagrams is the subject of analysis —an arbitrary set of patches of paint made to provide a varied set of light and dark disturbances, forms and inclinations, speed values

and sensations of relative sizes. As such our interest in it can only be an objective one.

As our subject-matter it occupied the space A on the apparatus (diagram 30, page 61), space B being covered by a light coloured painting board.

Taking up our first focussing point at ninety feet with the flap down only the blank board B was visible. From where we stood with the flap raised major and minor light and dark disturbances became generalized, leaving the whole subject more or less revealed as a large light disturbance with woolly edges. The reader can test this simply by closing down the eyes and viewing plate 31A, page 69, the closing down of the eyes in this instance having the same generalizing effect of distance.

Underneath plate 31B will be found the working formula of this stage and its study will help the reader to understand more accurately the method of thought which produced formula 1. We have said that the generalization of 31A by distance left visible a simple light disturbance with somewhat woolly edges. We were, however, not pressed for time and it was just as easy to gather more visual data before doing any painting. Working formula 1, plate 31, page 69 will show how this data was consciously gathered. As can be seen this diagram has been numbered and lettered for easy reference. Thus, area 1 A represents the space occupying the top left hand corner, while 3 B touches on the exact centre of the whole board at its upper right hand corner and so on. With this to help us we proceeded to gather more information about the exact placing of this light disturbance. We noted that it began approximately in area 4 B and occupied the whole of this area straggling upwards, beginning as it advanced, to move towards the right and cover the centre of the board. It continued its course upwards, falling always towards the right until it finally reached the bottom corner of area 1 B. Then it filled about half of the space 1 C. At this point we decided that sufficient material had been gathered to make it worth while to start painting. The next move was to construct a pigmental formula. Now, we noted that the board B was relatively light and that the quantity or strength of this lightness was approximately of the same strength as the light disturbances seen in plate 31A. With this observation our formula was complete—all that remained was the technical job of postulating it on the board B. Before this could be done the flap had to be lowered so that when we approached to arm's length to paint on B we were unable to see A. A tone darker than the board B was then mixed on

the palette and bearing in mind all the material we had collected, this darker paint was applied fluffily around the area spoken about. This done, with our material exhausted we returned to the focussing point to check the success or failure of our efforts. We did not expect failure because we had made clear statements about appearances and were not attempting to do anything very difficult. We knew that the result would give us the sensation of a light disturbance running up the board and that in this respect, at least, success was achieved. But neither did we expect that the painting and the subject would be, as yet, visually interchangeable. Back at the focussing point we observed that the light disturbance climbed too high up the board and the approximate amount by which it was too long is indicated in working formula number 2, plate 32, page 70. It was also seen that the speed value of the form was greater at the point indicated in the diagram by the arrow. After deliberation and careful checking it was decided that if these two alterations were effected the painting would be advanced a stage further. Again we had to construct a pigmental formula which would enable us to do this. Since the observation made concerning the length of the light disturbance was one pertaining to form, the same tone as that already applied was used to shorten the disturbance. The other change noted was not a change of form, but a change of tonal relationship. Such being the case it was decided to increase the extension between lightness and darkness in the area indicated. This was done by darkening the dark tone, care being taken not to alter the formal characteristics already present in working formula 1.

This completed and the result checked from the focussing point, it was found that complete interchangeability had been attained. Job number 2 was therefore finished and with the flap held open we moved slowly and cautiously forward until minor differences became apparent on space A. When this happened *focussing point number* 3 had been found (approximately 70 feet). These minor characteristics, the presence of which denoted the new focussing point, marked the dissipation of the sense of interchangeability which had existed at the longer focussing point. The task was then to deal with them in order to achieve once again feelings of visual similarity between A and B and at the same time to maintain them back to ninety feet.

Amongst these minor changes transverse bars were felt running across the top portion of the light disturbance, a few minor light disturbances were noted in areas 1 A, 1 C, 1 D and 4 D, also a dark disturbance was seen protruding into the lower part of the

major light disturbance. These differences will be seen written on the working formula number 3, page 71. The construction of a pigmental formula to reveal these additions proceeded in this way: the transverse bars of darkness running across the centre of the board in areas 2 B and 2 C were classified as formal characteristics and the dark tone around the large light disturbance was used to cover these areas; the smaller light disturbances in 1 A, 1 C, 1 D and 4 D were produced by the tone of the major light disturbance applied to the parts chosen; the dark disturbance pushing into the bottom of the light disturbance was indicated by moving the darker tone into the shape shown in area 4 B. All these changes involved alterations of form; no tone already existing was altered. Having made these changes and the result being checked from focussing point number 3, it was found that interchangeability had once more been achieved.

Let it be understood here that having once effected interchangeability from a long focussing point, what has been put down (generalized tones and shapes) will form the ideal preparation for the splitting-up process which takes place at nearer focussing points. Technically, from this solid foundation, the work becomes progressively easier for it is only necessary to modify and to add smaller forms and extensions of tonal relationships. Nevertheless, although the work becomes easier once the painting has become interchangeable at a long distance it becomes more exacting in its technical demands as the painter is called upon to control finer gradations. In other words, as the focussing point approaches the picture it becomes easier to speak about differences but more difficult to control the medium and make it do what is wanted. Stated briefly the difficulties are in this order: the first formula is the most difficult to define, while technically it is the easiest, for it is only painted with approximate tones and shapes; the last formula is the easiest to formulate and the most difficult to control pigmentally. But technical difficulties, so long as they remain within the potentialities of the medium, are more easily resolved than mental ones and so we repeat that the work becomes progressively easier from the first successful formula. As a matter of passing interest we may remark at this point that all the various media employed by painters possess their own qualifications and limitations. Of them all, oil-paint is the one in which mental control is easiest to retain and this control only finishes at the point where the artist attempts to make tonal differences equivalent to the small change which operates between *wet* and *dry* pigment. (Better terms would be *plastic* and *solid,* for the process

A

B

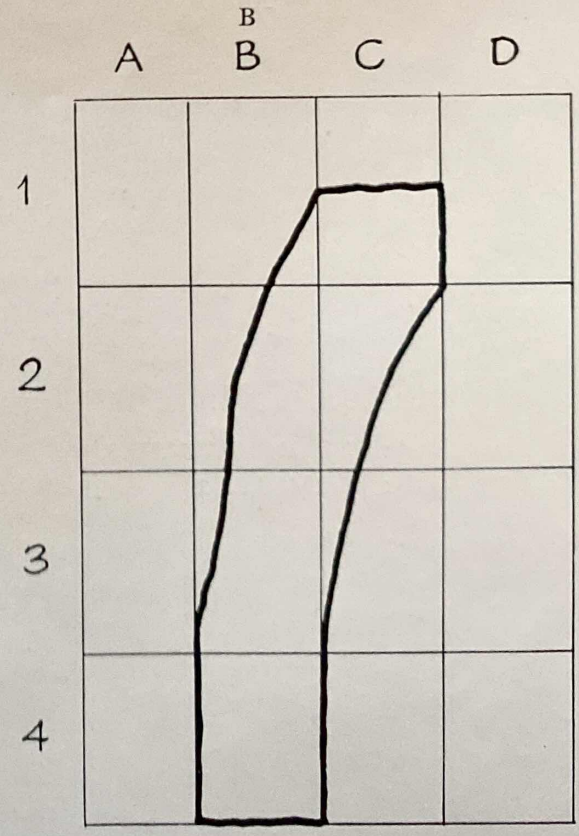
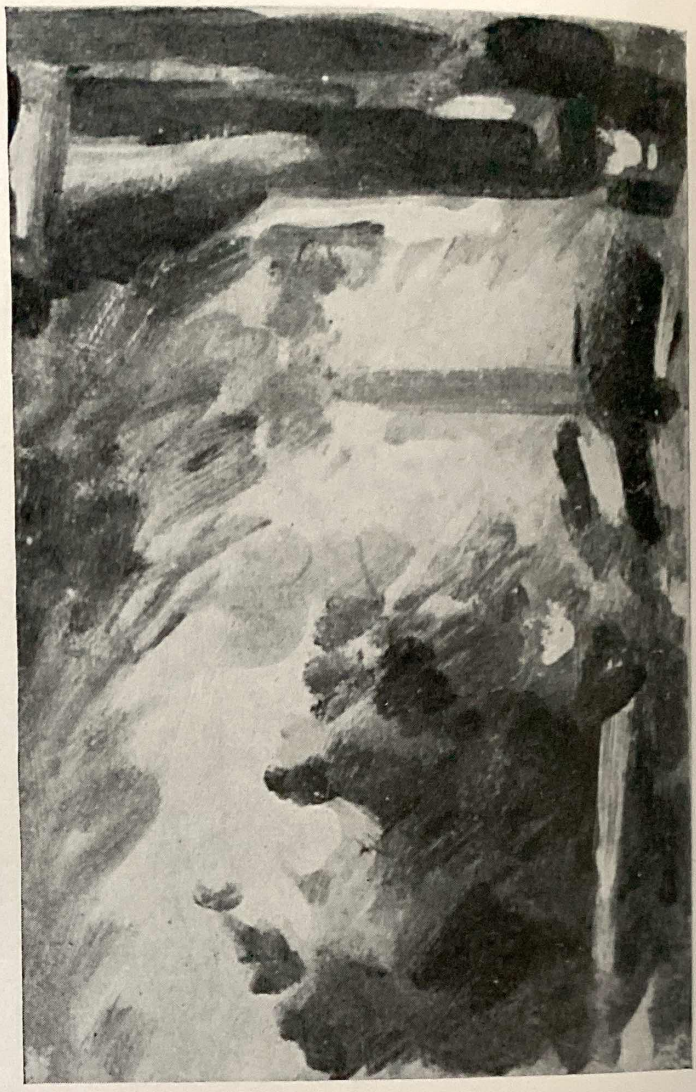


PLATE 31 A AND B.
A: SET OF PATCHES.
B: FORMULA 1.

A
SET OF PATCHES



B
FORMULA 4

PLATE 34

A
SET OF PATCHES

B
FORMULA 5

PLATE 35

A
SET OF PATCHES

B
FORMULA 6

PLATE 36

which takes places here is the chemical process of oxidation of the linseed oil in which the pigment is suspended. In this chemical metamorphosis, while the tone of the pigment does not change, the oil darkens slightly, and this darkening which depends upon the quantity of the oil used, varies accordingly. At this point it escapes the control of the painter. This limitation, however, does not immediately concern the student for by the time he has *legitimately* reached such fine distinctions of tonal relationship he has attained to the rank of master-craftsman).

It would be tedious to detail all the changes that have taken place in the set of patches from stage 1 to stage 6, more especially since words are becoming inadequate in the description of such fine distinctions. The interested reader is invited to examine the development of them as an exercise; to endeavour to pick out the facts dealt with in each case; to classify them as far as possible in their natures as tonal and formal characteristics.* In other words to speak about them, not merely to gaze on them.

Before leaving this method of study let us summarize the minimum precautions which *must* be observed if we are to obtain the full benefit of it.

1. Consciously select a focussing point, preferably too far away than too near.
2. Take care to drop the flap before leaving the focussing point.
3. Do the minimum amount of work, with the minimum amount of material calculated to produce the desired effect from the distant focussing point. Thought and imagination are necessary here for what the board may look like at hand's reach does not necessarily concern the immediate objective.
4. Do not too hastily conclude that complete interchangeability has been obtained. To advance to a shorter focussing point before completing the task at a previous stage is to negate the whole exercise. Invoke the criticism of a friend where possible and if he can feel and speak about differences to which you have to agree your job is not finished.

* The set of patches has been done in monochrome (black and white paint) and as such contains *only* tonal and formal factors. The student who wishes to pursue this method of the sub-division of the visual impressions by distance may if he wishes choose a picture or set of patches in colour. In which case there will be *three factors* to appraise and control in their orders of ocular awareness.

5. Continually check back to earlier focussing points to discover whether feelings of similarity still exist at these stages. If in doubt have the courage to start off afresh from the stage at which doubt has arisen and then work forward again.*

. . . . .

Lesson Notes:

"Make your alterations as simply and as rapidly as you can in order to retain in the memory as much as is possible of the previous condition of the canvas. This will assist you to state whether the work has advanced or not. Remember that the memory of what we have seen does not last long, hence the necessity for changing the appearance of the canvas as quickly as possible before we forget what it looked like before the alteration was made."

. . . . .

"Your formula is only good as far as it is based on your sensations. When it is put into practice and the canvas reflects the sensations upon which it was based, then, and only then, can you be sure that your reasoning was scientific."

The Analysis of Visual Phenomena by Speed of Mental Awareness and Definition

In the light of what we have learnt in the analysis of the patches by distance, we may now consider how the knowledge gained may be applied to three-dimensional subject-matter. We have seen that by the use of distance the awareness of the orders and degrees of visual phenomena can be defined in a *leisurely* and *methodical* way, but while the principles at issue still remain the same, another method becomes necessary in the analysis of visual problems from *fixed focussing points.* Problems of this nature can only be resolved by speed of definition and demand greater practice and experience. As an example of three-dimensional subject-matter, plate 37A, page 79, represents a white plaster cast of a hand against a dark background (Subjective Perception—names of things—Column III in the chart on pages 36 and 37). Diagram A is a photograph of a painting which had to be done from a fixed focussing point. As a visual problem it represents a certain scheme of tonal relationships and placements making forms or tracks for the eye with varying ocular speed values determined by tonal relationships more or less extensive (Objective Perception—names given to ocular phenomena as such —Column II). In plate A, note the simple set of tonal and for-

* "Try first to do what you have already understood, it will be time enough to learn that which is hidden to thee today" . . . *Rembrandt.*

mal relationships, entirely based on appearances, revealing the cardinal characteristics of B. The formula for the formal characteristics of A is shown as an abstraction in diagram C. The bold line represents the forms which are sharp and precise, the dotted line bounds those which are relatively fluffy and confused.

In the actual painting of A, a generalized tone was chosen and applied as seen. The almost ridiculous simplicity of this formula nevertheless proves its success when compared with the subject-matter B, for it has the obvious effect of lifting the diagram C from dead abstraction to living realization. Partially close the eyes or make use of the diffusing screen (see back of book) to test this statement, and it will be seen that this simple formula contains all the elements of completeness.

So much, at present, for the objective demonstration of visual phenomena. A could have been carried through all the succeeding stages in the systematic way demonstrated in the set of patches (plates 31 to 36) and the two still-lifes in "The Evolution of Appearances, Chapter IV, but we leave it now to consider the *subjective* approach to the same set of ocular phenomena illustrated in diagram D. Here we have a *drawing* built up from a mixture of subjective and objective data, the analysis of which will reveal that the artist's thoughts had little in common with the simple factors in the spontaneously sensed formula A. We have noted that in A no abstractions ask for translation; no conventions pose as depictive achievements; nothing much is attempted but much is visibly given. On the other hand, in D we are asked to guess the message of the depictor. The line running up the right hand side of the plaster object has to be translated and accepted as the place where the plaster ends and the background begins—it is not spontaneously understandable, since it is an abstract statement of a tactile fact which has to be adapted to what is vaguely thought of as a "mental image." The top of the arm against the background is again marked in the same way by an abstract line, where in the objective statement, A, it is shown as a contrast of light against dark, merging into the background at the left hand side. It will be seen also that the physical or tangible edge of the plaster is clearly marked throughout the diagram D, and its demarcation at the left hand side against a lighter background creates a form which as yet does not exist in A. Note all the other subjective conventions contained in diagram D such as outlines denoting tangible edges, most of which would finally have to be scrapped in order to realize the picture shown in diagram A. In the world of appearances tangible truths do not always

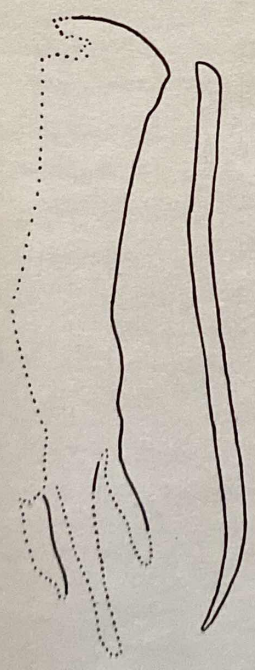
coincide with visual truths for the truth of one sense is not necessarily the truth of another, and this method of approach (D) can only be considered to-day as obsolete and cumbersome. Let the reader carefully consider these four diagrams together with the thoughts embodied in them and he will indubitably find that this criticism is fully justified.

The states of mind indelibly written in A and D require no further comment except to add that the mixture of tangible and visual truths seen in D shows an almost complete ignorance of the real nature of the painter's craft. Hybrid forms of art can be accepted and made allowance for within their particular periods in the development of the science of depiction; they can be accepted in a hieroglyph, a picturegram, a painting of the XIV century or a child's drawing, but they are not pure art forms and cannot be considered as such in the present state of the craft of painting. They are superseded forms which like vestigial organs sometimes cause a lot of trouble.

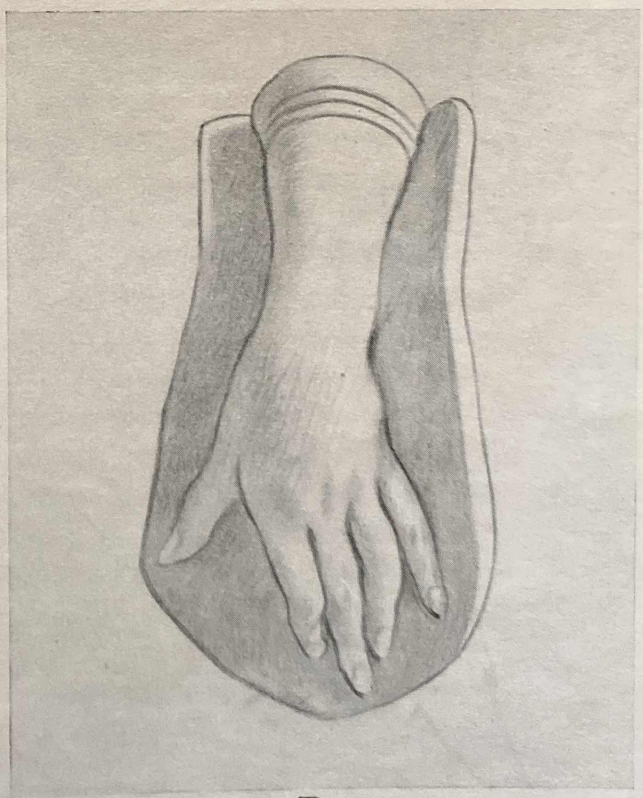
Diverging now for a moment to consider the origin and development of this aesthetic appendix called "drawing"; we know that early man started his depictive experiments in a very simple way, that his media and knowledge of visual phenomena were inadequate to carry him far into the realm of appearances as explored by a Rembrandt or a Velasquez. It was difficult for him to find flat surfaces to paint on and his range of pigments was, to say the least, limited for it consisted of the few colours and tones which he extracted in the raw state from the earth, ground and mixed in various greases and fats. Accordingly his aim had to be a very limited one. He drew tangible edges which he filled in with the tones and colours at his disposal. Now, the progress of the art of painting has been dependent, as have other sciences, upon a general state of knowledge involving the invention of newer and more efficient tools. Primeval man was obliged to do what he could with what he had and so to convey his message he was forced to supplement the inadequacy of his media by the addition of readable symbols and conventions (see Cro-Magnon, page 233); but to-day these helps are no longer necessary, since we possess a medium of expression (oil-paint) which enables us to dispense with these extraneous aids and to replace them with spontaneously comprehensible facts on appearances. All this being so, what is known as drawing is in the main the expression of symbols requiring translation and which, like all translations, have distorted and weakened the original message.

A

B



C



D

DIAGRAM 37. MODERN AND OBSOLETE METHODS OF APPROACH.

In the invariable development of the art of painting the name of Velasquez stands pre-eminent as one of the first painters to discard so-called *drawing* in his efforts to reveal appearances. Very few drawings of his are extant and he may be truly called the first great modern to attack his canvas directly with the brush. His pictures stand as instances of the practical and scientific nature of his thoughts and methods. Examine in chronological order the illustrations in Appendix, Lectures, page 213, with the express object of comparing them and noting the progression we speak of. Drawing, once again, is a strange anachronism, still persisting in the curricula of art schools and academies. There are many reasons for this survival which we need not discuss at present.

For the student who wishes to practice a truly modern form of art the study of this out-of-date method forms a break between what is accepted as drawing and pure painting—a hurdle in the progress of the student which few ever surmount. Those who do, have lost a lot of valuable time during which they acquired a number of impractical habits difficult to eradicate.

Nevertheless in spite of what we have said, drawing is not without its uses. For all forms of applied art: the designing of houses, machinery, furniture, wall-paper, carpets, decorations, garments, commercial illustrations and advertisements it is specially fit, but for the true painter whose study lies in the consideration of the evanescent flow of light and shade by which exterior nature is revealed, it is worse than useless; like the study of anatomy, still taught in many schools of art, it has nothing to teach us about the real nature of appearances.

. . . . .

Lesson Note:

"Abstract theories such as Perspective, Composition, etc., are just a hindrance to the objective painter. While the simple rules of perspective are demonstrable on elementary objects, as a means of representing the complexity of planes and spaces which make up a human head they are impractical. No human mind could possibly apply abstract rules to such subject-matter. Don't bother therefore with these obsolete mechanical theories however they may superficially appear to be practical. Apply yourself entirely to the analysis of visual phenomena and the correct statement of these will create automatically the illusion of what is called Perspective or Composition."

The Objective Consideration of Tonal and Chromatic Factors as Entities

The objective analysis of appearances confers the ability to portray, with equal success and within the degree of knowledge attained, all forms of subject-matter, irrespective of their subjective interests.

Adding to comments upon the evident pleasure taken by the great artists in the depiction of subject-matter which from the subjective standpoint contained no interest for the irresponsible, story-seeking public, witness a Rembrandt revelling in his depictive maturity in the play of light, shade and colour which to the average member of the public represents only an ugly, greasy carcass of beef hanging in a slaughter house, plate 17, page 269.

Mention has already been made of the great speed—mental and technical—necessary in the portrayal of out-of-door subject-matter. In landscape the painter can never be too speedy and dextrous, for although the things (subjective perceptions) in front of him remain unchanged as long as he can see them they are revealed objectively by ever-changing dispositions of tones, patterns and colours. The laws of cause and effect oblige him to define and postulate these dispositions as they happened at a given moment, otherwise his work would not excite comprehensible sensations of reality. In this respect landscape painting may be likened to the prestissimo movement in music which can only be performed after much practice.

The landscape, "St. John's Parade," plate 38, page 86, has been left an elementary statement of foundation qualities from which we may read more easily the thoughts which produced it. In this condition the painter's intention is more quickly discernible than it would be in the more finished product, which by its greater degree of interchangeability with nature would more effectively mask the formula employed. Quite obviously we see here that the sole preoccupation of the executant consisted in the analysis of tones, forms and colours (Column II) and that these were laid down as simply and quickly as possible to test how far they were capable of conveying the awareness of things (Column III, page 37)—in this case trees, brick buildings, sky, telegraph-posts, roadway, culverts, etc. For the layman we may say here that it is not necessary to be a painter to sense reality through a work of art, but an interest in the science of appearances is required if he wishes to know *how* it was produced.

Diagrams 39 and 40, pages 87 and 88 represent the dispositions of three tones and four colours, which in combination produce the plate 38, page 86. They have been designed to demonstrate the entire independence of tonal and chromatic arrangements and to show how it is possible for the painter to think of either of the two factors separately. The ability to do this is one of the greatest aids in the craft of painting. Once acquired it reduces the difficulty of the painter by enabling him to make small changes in one factor while leaving the others unchanged. Thus if he wishes to change a form he will note that it is revealed by the apposition of two tones having a certain extensional value outside of its formal and chromatic characteristics and warned by his past failures he will resolve to change this form ever so little in the desired way *and to maintain at the same time the other two factors as they already exist.*

This is the procedure of the painter who has learnt to think of tones, forms and colours as things in themselves and which gives him the power of adding fresh visual data to his work without obliterating truths already laid down. Further, the practical craftsman has learnt to be cautious, and whilst consciously maintaining intact factors with which he is not immediately concerned, he is content to make infinitesimal changes in the factor which concerns him for the moment secure in the faith that however little he is changing his work it is moving ahead inevitably. The capacity to change one factor and leave the others as before is an acquired one and is one of the chief endowments of the master-painter.

. . . . .

Lesson Note:

"In the business of art all your strength is needed and you must seize any chance to relax. The three factors can be thought about and dealt with separately and you should approach the canvas with your mind clear about which of them you intend to change. *If it is a formal change you must take great care to define it from your focussing point and check the result from the same place.* If, on the other hand, you wish to make a change in tone or colour your definition may be made from *somewhere reasonably near* the focussing point. Here is your chance to take a breather. Grab it."

To illustrate visually and more exactly the application of the capacity spoken of, examine plate 38 and diagrams 39 and 40 devised with this end in view.

The upper left hand corner of the landscape shows an area marked olive green in the colour diagram 40. Reference to the same area on the tone diagram 39 shows this part divided into two, covered in one place with the intermediate tone B and in the other by the darkest tone A, i.e. this area has been defined as a proposition of one colour and two tones. The part attached to the area spoken of, marked red (the chimney) shows a similar disagreement, the shadow part of the tone chart has been classed as tone A, the same tone being found on other parts of the landscape as indicated. The lighter part has been classed as tone C, and consequently merges tonally into the sky. The tonal and chromatic characteristics denoting the chimney are thus defined as another proposition in one colour and two tones. Similar comparisons can be made in other parts of the picture, demonstrating the complete independence of tone and colour. Definitions of the formal characteristics of this landscape have been equally simple. From left to right against the sky: the tree has been defined as a solid, irregular clumpiness and the edge of the roof as more regular and elementary forms, a pyramidal saw-edged shape, a few small shapes of a clumpy nature, and the more regular shapes of a chimney and buildings. Underneath all these a few formal shapes and inclinations denoting telegraph posts, the end of the street and various small forms. The reader may be left to appreciate by reference to plate 38 the principles of factorial specialization as exemplified in the colour and tone diagrams and also how (if correctly stated) a few elementary facts can reveal perceptions of reality. It must be said, however, before leaving this subject that no more must be asked from any formula than what it can give and let us add the warning that it must be completely exhausted before being further complicated and split up into smaller details. Plate 27, page 56, exemplifies a formula equally simple but which has been more completely exploited. We have already spoken about the speed which is necessary in the valid (not faked) painting of landscape. These two pictures were painted in an hour and represent the maximum that the painter could give in this short time. It may be noted in passing that few painters possess the artistic conscience and the sketches they make out of doors, such as they are, are generally taken home and tampered with, a process which for dubious reasons is known as "finishing".* But such methods, dictated by the

* "What finishes a picture is not the quality of details—it is the truth of the whole." "Nothing is of account but the fundamental."—*Jean Francois Millet.*

PLATE 38

"ST. JOHN'S PARADE"
(Painted 1935)

MAX MELDRUM

DIAGRAM 39. TONAL ANALYSIS
OF PLATE 38.

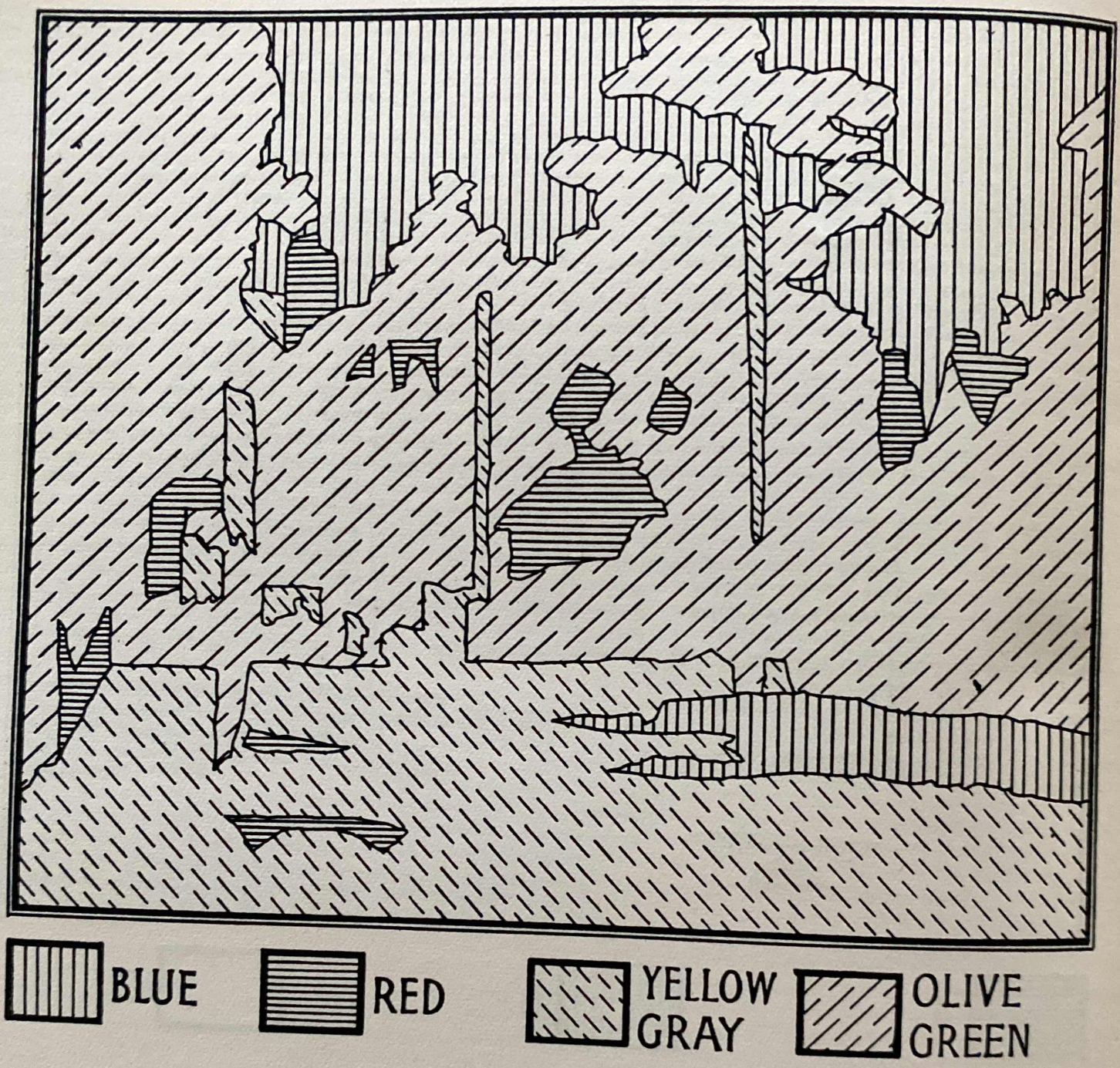


DIAGRAM 40. CHROMATIC ANALYSIS OF PLATE 38.

desire to obtain results for the *picture-minded* members of the public and not by the desire to externalize demonstrable knowledge, only lead to the actual finish of the paintings as works of art, for in the province of objective visual phenomena, memory hardly exists even for the most accomplished painter. Constable describes the arrogant pretence of legitimate finish by the terms "fal-de-lal" and "fiddle-de-dee." No doubt he was annoyed by the ready public acceptance of the charlatan and unscrupulous tricks of his more successful fellow-painters, for he knew, only too well, how much more honest his work was than the work which received all the "honours and emoluments." Frustrated and neglected, he bitterly complains, "My art flatters nobody by imitation, it courts nobody by smoothness, it tickles nobody by petiteness, it is without either fal-de-lal or fiddle-de-dee, how then can I hope to be popular?"

The Ulterior and All-Compelling Interest of Sex

Enough has been said elsewhere to show clearly how the intrusion of subjective perceptions and conceptions, not built scientificially on the empiric knowledge of appearances (Column II) produces impure and decadent forms of art. These subjective impositions are many and varied and while little is to be gained by describing them all in detail it is appropriate here to make a few brief remarks upon one of the most persistent of them—the all-compelling ulterior interest of sex. Although the word "pornographic," as applied to the depiction of nude figures has been a constant source of speculation, in reality no mystery exists. A pornographic nude is, to describe it as simply as possible, a reflection of the impure state of mind of its executant, irrespective of the posing of the subject. This is not to suggest that the instinct of sex is an impure one, the inference being merely that its occurrence in the domain of appearances constitutes an impure element akin to the intrusion of religious, sentimental, historical or other subjective interests. We have said that a work of art automatically engenders in the mind of the observer the mental state of the executant. And since this is so the

purity or impurity of a work of art cannot be checked up by any cut and dried theories. It is something which can only be sensed in much the same way as we sense discordant sounds, nauseating smells and disagreeable tastes. Thus we can accept certain gestures and actions of children, which, coming from the adult, would instinctively repel us.

The instinct of sex is such a powerful one that few artists have ever depicted *pure* nudes. The majority have not been true enough artists and great enough craftsmen to surmount this instinct; to forget themselves in the ardour of the work and to leave behind them manifestations of pure depiction. On the other hand, artists of the calibre of Rembrandt, Velasquez and Rodin, to name but three, have never painted or sculpted nudes which could be called pornographic. This is not to say that these men were not interested in sex, for all great artists have been normally working human machines, it simply means that they were great enough craftsmen to project themselves entirely into the immediate work at hand and in this way achieve works which convey to the observer the purity of their thoughts. It is quite unnecessary here to mention that our concern is not with those paintings of nude figures deliberately manufactured to arouse the impulse of sex by craftsmen more or less competent.

Objective statements of any sort can never be impure, they need have no concern with fashionable conventions or ideas on what is good or bad, ugly or beautfiul and this remains the truth however disagreeable it may sound. Subjective ideas, on the contrary, are more than often impure, but because of their source, are generally pleasant to listen to.

. . . . .

Lesson Note:

"You feel lost—nothing surprising in that since your work is full of symbols which have nothing to do with actual appearances. Considerations of things: skies, heads, trees, distances, will only frighten you when you look at the flat surface of your canvas and make you lose control of yourself. 'Stick to your last,' tones, forms, and colours are all that concern you. Brush out ruthlessly all your symbols. Stop trying to explain nature better than she explains herself—accept what she gives you through the eye alone and you will regain your control and begin to see clear ahead."

The Introduction of Monotony

It is accepted as an unalterable fact by the student of appearances that natural visual phenomena never repeat themselves. It is true that nature repeats herself in that she makes the day follow the night and the night follow the day in endless procession but the words *day* and *night* are subjective concepts representing generalized dissimilarities which in relation to each other we elect to call day and night. The truth is that from the purely *objective* approach what is called night and day are merely visual problems which in their particular generalizations are entirely similar.

"The world wide; no two days are alike, nor even two hours; neither were there ever two leaves of a tree alike, since the creation of the world; and the genuine productions of art, like those of nature, are all distinct from each other."—Constable.

Perhaps no one more than the painter is in a position to realize the truth of this, which, being forced upon him progressively in the course of his study finally makes him understand that the production of an infinite variety of visual relationships can only be obtained insofar as he is content to lay aside his own ideas and become the simple interpreter of natural light phenomena.

Even when he has accepted the humble role of interpreter the task of the painter is not so easy as many might suppose for in his attempts to portray the infinite variety of natural dispositions of light, shade and colour he is made to realize his own limitations as a painting machine. As such, certain actions which nature imposes on him in the course of the construction of the illusion of reality happen to fit his machinery and are easy to do; others for the same reason are difficult. Because of this ease and difficulty of execution the painter, in striving to obtain infinite variety, will unconsciously repeat actions which are physically easy introducing thereby the element of monotony into a theme containing infinite variety. Just how far the limitations of the human machine tend toward the introduction of monotony is seen in the average pen and ink drawing. With this inadequate art medium the artist generally indicates tonal gradations by a series of parallel lines more or less close to each other, as the sensation required is lighter or darker. It is a mechanical fact that the easiest and most controllable inclination for the average person is downwards from right to left—practically an inclination of 45 degrees. For the left-handed person this will be reversed. Because of this it is usually possible to deduce from a pen-drawing whether it was done by a right or left-handed

person. For the same reason the right-handed person will find it less easy to control repetitions of horizontal and vertical inclinations. The most difficult for him will be the intermediate between the horizontal and the vertical from the left downwards to the right. The horizontal and vertical inclinations would, of course, be of equal difficulty for the dextral or sinistral executant. Added to these statements on the limitations of human machinery, the pen, pencil or the brush rotating on the articulations of the arm will make a slight curve more easily than a straight line and the nature of direction of this curve will show even more decisively than the straight line the right or left-handedness of the draughtsman. In this example of the pen and pencil drawing the element of sensorial monotony so foreign to natural ocular sensations is introduced by feelings of inclinations or ocular tracks repeating themselves *ad nauseam*. Diagram 41A, page 93, symbolizes a man-made fence receding into the distance. For practical purposes a fence is composed of posts spaced out equally and planted in the ground at equal depths. Its aesthetic effect, however far it may serve its purpose, is lacking in interest particularly when contrasted with the natural objects around it, such as trees, etc. In itself it can be considered as visual monotony; otherwise stated, repetition of similar ocular stimuli creating in turn a want of ocular interest and feelings of depression. Such feelings of depression, through whatever sense organ derived, should be considered as grave warnings, for it is a biological truism that the repetition of any mechanical act—and a physical act becomes mechanical in ratio with the loss of mental interest in it—degrades human machinery. What then does nature in alliance with time do with this standardization called a fence? Her first efforts to impose variety on monotony and to destroy man's standardizing mania is to stop him from seeing any of these posts as equal in thickness or in height, for according to the laws which govern the third dimension there is no place from which he can view this fence and see the posts *objectively* as equal in height and breadth. This is the first mild intimation that he is daring impiously to transgress her first law—the law of inequality. Other sterner reminders quickly follow. The quality of the wood in the posts is more or less resistant, the state of the ground in which they are planted differs, one of them begins to lean a little bit this way, another that, creating a more varied sense of heights, inclinations and spaces, which introduce progressively more ocular variety, reacting within us to produce feelings of what can be described by the word *charm*.

Of a well done painting of a fence or a building with the aesthetic patina of time marked on them, how often do we hear the

expression "how charming" or "how poetic," epithets which would never be applied to the depiction of a new structure. In contrast to diagram 41A, diagram 41B represents symbolically a line of trees in which we observe in contrast to the fence, varieties of inclinations providing for the eye a more complex subject of study leading us away from ocular boredom and tending to produce more cheerful feelings as they provide a greater source of mental interest. As an exercise we leave it to the reader to analyse the characteristic inclinations included. Some of them may be considered as one inclination, others may be split into two or three. The method by which this analysis may be made is outlined in diagram 42.

Analysis of Inclinations.

Inclination 1 occurs 8 times
Inclination 2 occurs 8 times
Inclination 3 occurs 3 times
Inclination 4 occurs 3 times
Inclination 5 occurs 2 times
Inclination 6 occurs 2 times
Inclination 7 occurs 2 times
Inclination 8 occurs 1 time
Inclination 9 occurs 1 time
Inclination 10 occurs 1 time
Inclination 11 occurs 1 time

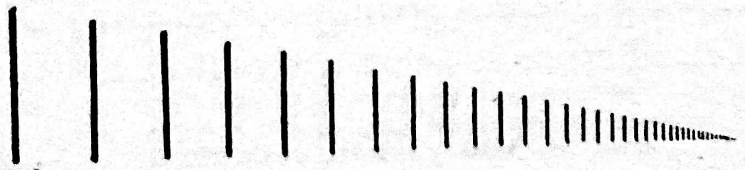


DIAGRAM 41A.

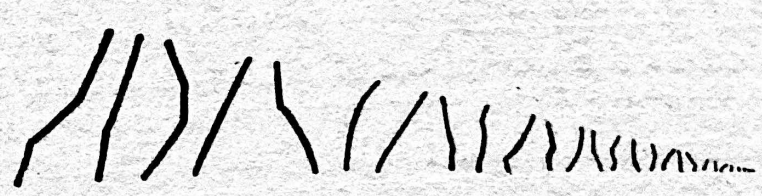


DIAGRAM 41B.

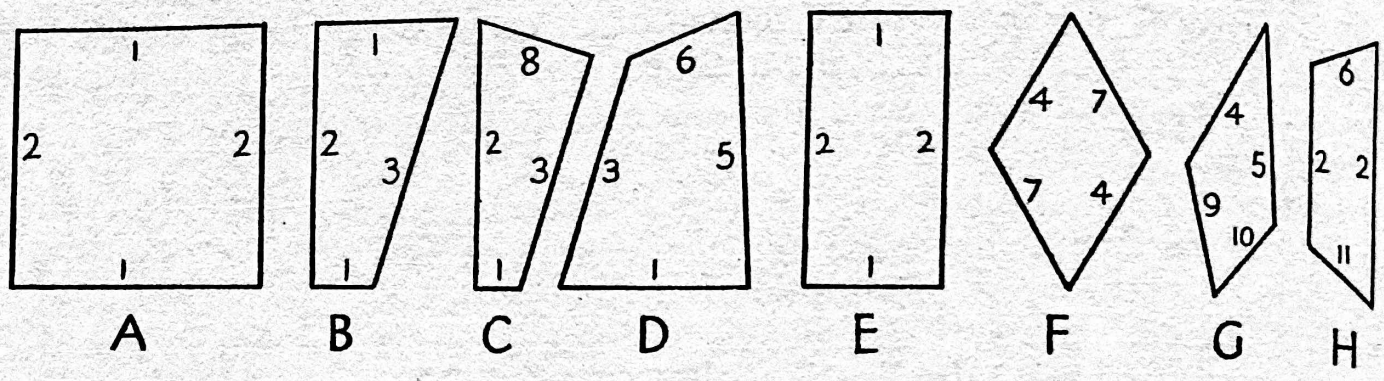


DIAGRAM 42.

Inclinations 1 and 2 repeat themselves 8 times and are consequently the chief factors in the introduction of feelings of monotony. Number 8 is number 6 reversed and in this respect they possess a certain similarity. Numbers 7 and 4 and 9 and 3 balance each other in the same way; number 11 is nearly similar to number 8, and so on. The resume of this analysis is that number 10 is the most individual of the series—it is the most vigorous rebel against the introduction of monotony of inclination.

Analysis of Lengths.

The greatest length is 3, figure B. After this in order comes 5D. The greatest number of repetitions occurs in number 2 A, B, C, E and H. Skipping the intermediates, the shortest length is 1C. This is the length standing most apart from all others.

Analysis of Areas.

Consider figures A, B, C, D, E, F, G, H as areas bounded by

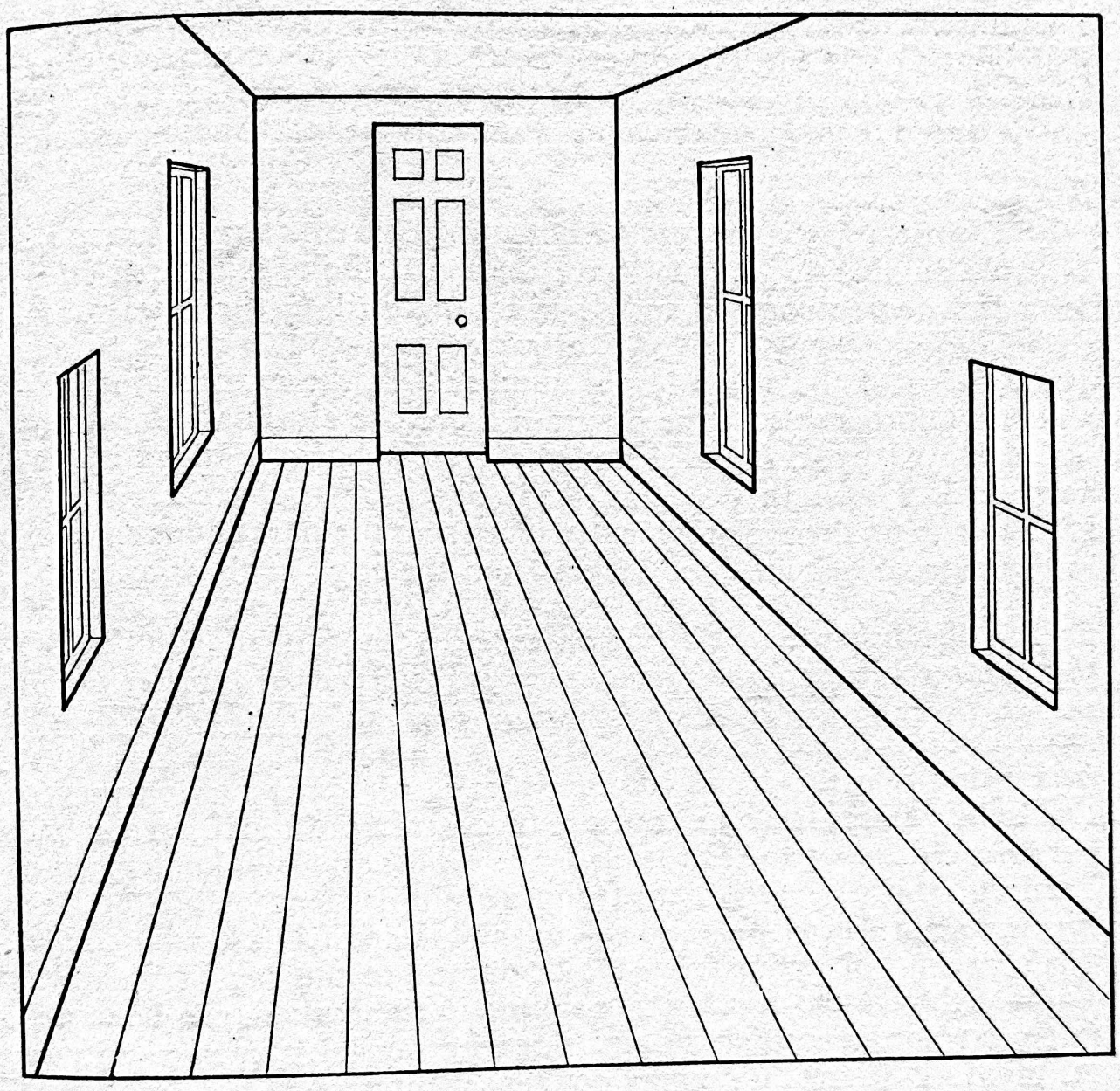


DIAGRAM 43.

four lines. The largest is A and the smallest can be classed approximately as G and H. The others, B, C, D, E, F are nearly similar sized areas and are consequently the most monotonous. G and H are nearer to them in size than to A and this means that the outstanding area in the series is A.

Chromatic variations can be noted in plate 67, page 158. On the left side numbers, 7, 6 and 4 have the most affinity with each other. In a less degree come 5 and 1. Moving still further away from chromatic monotony the eye is attracted to 3 and 2, and a further examination of these two leaves number 3 as the most obvious dissentient. On this side of the diagram therefore chromatic monotony is introduced by 7, 6 and 4 and the extreme degree of variety by number 3. (N.B. In checking tonal or chromatic variations it is advisable to fix the eye at some distance from the part under analysis, in this case, say about three inches from the edge of the diagram.)

Finally, because of his human executive and mental limitations *the painter cannot hope to make an infinitely varied collection of visual phenomena except and as an impersonal interpreter.**

Having said this let us consider that in plates 31 to 36, pages 69 to 74, the painter has set out to produce variety of tonal, formal and chromatic differences. He starts his work consciously, knowing that he must not produce too many feelings of similar lengths, inclinations, forms, tonal relationships and colours and to do this he must maintain this conscious objective from the beginning to the end of his work. Each of these factors, relatively simple in themselves, can be varied to an extraordinary degree and since he must list each variety in his mind in order that he may not repeat himself he very soon loses count and from there onwards his machinery begins to act automatically and he begins to repeat himself. To evade this pitfall he must become verbally and mentally articulate about his visual sensations and thus although the highly articulate painter can delve more deeply into the study of varieties of tone, form and colour with all their derivatives than the young student even such a painter eventually comes to the end of the conscious control of the factor, variety.

Let it not be thought, therefore, that the remarks made in the description of the man-made fence, the avenue of trees and "Leonardo's Game," diagram 84, page 179, are too childish to mention, that they

* "The painter contends with and rivals nature."—*Leonardo da Vinci.*

may be taken for granted. No such thing. The painter, however great and experienced, has learnt that nothing is too simple to speak about. Like the student he is content to use baby language which is the precursor of more involved forms of expression. He will start the painting of a future masterpiece by stating to himself and anchoring in his brain simple observations which the less accomplished painter or student disdains to speak about. This neglect, in creating a mental hiatus, eventually brings him to a complete standstill. To a painter the voicing and writing down of his thoughts fixes them for future basic references in the same way as the writing down of a word helps us to remember its meaning and spelling.

"One must know how to make the trivial serve to express the sublime; in that lies real strength"—Millet.

Objectivity Versus Subjectivity

The best painter in the world can only hope to maintain a conscious state of objective receptivity towards his problems more easily than the less capable painter. In spite of this acquired facility he can never be immune to the allurements of easily-made subjective theories for it is fatally easy to allow ourselves to wander in the seductive by-ways of subjective fantasies and theories while it is extremely difficult to remain like the child in a world of pure objective interests. In youth we can all face realities and accept them for what they are but as we grow older and increasingly feebler many unadorned objective facts are apt to become terrifying and to escape them we allow ourselves to drift into an arm-chair life of subjective concepts and metaphysical extravagances which do not agree with our actual experiences.

The true painter's life is one constant effort to remain as young and courageous as the growing child and this is undoubtedly what Millet was thinking of when he called art a conflict.

We have mentioned elsewhere in other words how the inability to remain objective inevitably leads to depictive defeat and diagram 43, page 95 has been designed to further demonstrate how this, the greatest difficulty in the craft of painting, is one which cannot be over-rated. Read from the standpoint of subjective interests it produces a purely mental picture of a long room with two windows on opposite walls and a door at the end. This mental picture is

entirely subjective because it is caused by a set of abstract lines which in themselves cannot spontaneously produce sensations of depth.

This statement will be hard to accept for once a concept of a room (Column IV.) or indeed of anything has been lodged in the brain, it becomes exceedingly difficult, in some cases impossible, to start the analysis afresh from the position of Objective Perceptivity (Column II).

By a wilful liberty taken with the rules of the language of accepted symbols the door is made to convey the idea that it is higher than any of the windows and the windows on the extreme left and right to appear smaller than those above them. This much, note carefully, is *read, translated* and *mentally envisaged* from a piece of printed paper which objectively conveys no sense of real sizes, shapes or spatial qualities.

Let us now view the diagram from the opposite end, the objective approach, and we shall find that the story told is an entirely different one. From this point of view it can only be considered as a collection of lines of different lengths, inclinations and relative placements. Continuing our analysis in this way the lines which symbolize the right side of the windows on the right wall; the upright lines of the door and the left side of the windows on the opposite wall have exactly the same length. Visually this is hard to believe since we have started the analysis of the diagram from perceptions of *things* making it difficult to return to a position of objective clarity. Aware of this difficulty the practical painter has learnt to be cautious and when he decides to paint some part of nature, takes care from the very beginning to hold his study strictly within the limits of his task.

Knowing through bitter experience the difficulty of doing this he has invented all sorts of means calculated to help him to maintain the proper attitude towards his particular task. These are, as we have stated elsewhere, aids which will help him to think as a painter. One of these methods is to warn himself at the very beginning of his work that he must disregard all ideas on objects and things the better to concentrate his whole attention on the study of objective data. He will use a mirror, dark glasses or partially close his eyes to enable him, by the elimination of petty data, to surprise himself into the recognition of outstanding objective characteristics which in themselves can only be felt and not read like the symbols in hybrid forms of painting. The reader may adopt one of these

expedients here by turning the diagram upside down. In this position the symbols will be less readily named as walls, windows, a floor, etc. Seen in this way the symbols representing a room with the appurtenances cited will lend themselves more readily to an objective analysis revealing the fact that the lines above cited have the same heights. Even so with the diagram upside down or sideways, through the dark glasses or with partially closed eyes we are made to realize how irresponsibly the mind is apt to flicker backwards and forwards between objective and subjective considerations and also that the task of maintaining oneself in the sphere of objective visual data is one which demands continual care and vigilance. An experiment which anyone may make and which will further demonstrate that the difficulty under discussion is a formidable one is to provide oneself with a small hand mirror when visiting a gallery of pictures. Viewed upside down with the aid of this it will be seen that many of the paintings which had been accepted as living realities were in fact more or less flat canvases containing symbols which had to be read separately and transvalued into a mental picture.

A warning is perhaps necessary here. The reader must not be afraid if in trying out this experiment he finds that many of the pictures which he had accepted as valid achievements and grown to love, betray themselves in varying degrees as incompletely revealed facts for he will, to balance this loss, discover the few paintings which deliver their message clearly and without pretence. This is to say he will find the true works of art which, though fewer in number, will more than repay him for what he has lost.

All this is to say that the painter must be prepared to use any method which will assist him to think objectively. In other words to cultivate a state in which he has control of himself and his tools and is able to retire from the world of things to his only practical sphere of action—the two-dimensional world in which *things* do not exist. The mental technique of the painter consists in being able to induce this practical physical condition at will and when necessary.

. . . . .

Lesson Note:

"If you want to produce practical results you must try to think in a practical way. This implies that you must speak to yourself about what you see and how you propose to paint it. Words are necessary here and you must eschew, as far as pos-

sible, the use of words of an unpractical nature. For instance, if you consider something you have done successful it will not help you in future works to say that you had been inspired at that moment. The word inspiration was coined to describe the physical state of the painter when he painted well. You must know through your own machinery what this *inspired* condition means. Unfortunately, most of painters without knowing why they paint better one day than another, are content to accept the word inspiration as a reason for these fluctuations. This ready acceptance of a provisional word intended to cover the inability to give a more exact meaning is a bar to progress for the practical artist must get down to the clearest and most scientific definition of his visual impressions. Great artists are rare, for the most of painters are content to obtain results by irresponsible methods of thought. On the other hand those who are actually concerned with all the 'why's and wherefore's' of the craft of painting and the methods of thought involved become the significant artists of their time".

CHAPTER II.

Relativity

NEXT TO THE CULTIVATION OF THE OBJECTIVE STATE OF MIND THE greatest difficulty is that of discovering and circumventing the mental traps created by the infinite multiplicity of relationships of tones, forms and colours which by their interactions tend to provoke false concepts. Let us begin here by repeating that we are so constituted that in the search for definite knowledge the necessity is imposed on us to classify within our powers of mental control the endless changes and appositions of these factors as they actually exist in natural schemes of visual phenomena. Classification, to use another word, is simply a generalization of various factors possessing enough affinity with each other to allow them to be grouped together and laid down as a controlled working basis. This provisional foundation can then, insofar as it proves effective, be split up into smaller entities which must remain under mental control as our knowledge of the orders and degrees of visual data increases. The use of the words, *classification, generalization, mental control* as they concern appearances will be better understood by reference to plate 44, page 103.

Here we note in the bottom half a rectangle filled with a uniform tone and in the upper another rectangle divided into forty lighter and darker squares. The lower rectangle is the visual generalization of the upper because the extension between lightness and darkness of the squares on equal areas bears the same relationship on either side to the bottom rectangle. Put in another way, the dark squares are as far removed in darkness from the generalized tone as the lighter ones are in lightness. This being so, the bottom rectangle is the generalization of the light and dark squares above it. Leave now these abstract statements and let us see how they justify themselves when tested by the eye. With the eyes wide open the upper rectangle produces in comparison with the lower a feeling which in non-technical language could be described by the word *agitation*. View now the diagram with partially closed eyes, at a distance, or in a dark corner, and under such conditions the two halves combine to form an upright rectangle with approximately the same tonal value throughout. In this way and under such conditions the lower

portion of the diagram can be spoken of as the sum total of the light and dark squares contained in the upper portion and further it is clear that any generalization of differences of tone rests on a mathematical basis. Like, however, the mathematical bases of what is called perspective, which can be demonstrated on simple objects such as cubes, cones, etc., this kind of knowledge is of little use to the painter. His job consists entirely in the interpretation of appearances and he concerns himself with the instinctive search for true generalizations with the acquired faith that these in turn will bring about the *necessary effects;* he must work entirely from the empiric source of all knowledge obtained through the organ of sight for his subject-matter is always too complex and varied in tonal shapes and dispositions to permit him to rely completely on abstract theories. The practical nature of these abstractions must be placed on trial in the court of visual sensation wherein they may be judged as useful or useless.

. . . . .

Lesson Note:

"Perspective is a by-product of correct relationships of tone and form, lying completely outside of the painter's sphere of action. When you wish to do a job well do only the things which concern it immediately."

The Relative Bases of Sense Appreciation

It cannot be repeated too often that in spite of the tricky nature of appearances sane thinking can only proceed from a relationship made either consciously or unconsciously (for the student of appearances it must be a conscious basis). Thus a degree of darkness can only be measured in relation to its opposing quality, lightness; warmness to coldness, and so on through all the visual factors. The painter, unlike other people, must become articulate about his bases of comparison before he can hope to construct practical theories and to do this he must be aware of the extraordinary antics played by opposing visual qualities that he may not be misled by them; the average person may dumbly accept their pretensions as the real truth, but the painter must become aware that they lie in waiting as a formidable array of visual traps which he can only detect after having been snared many times. Practical experience finally inculcates in him the caution necessary in the acquirement of his craft and the reward for this responsible approach to his work comes when he ultimately

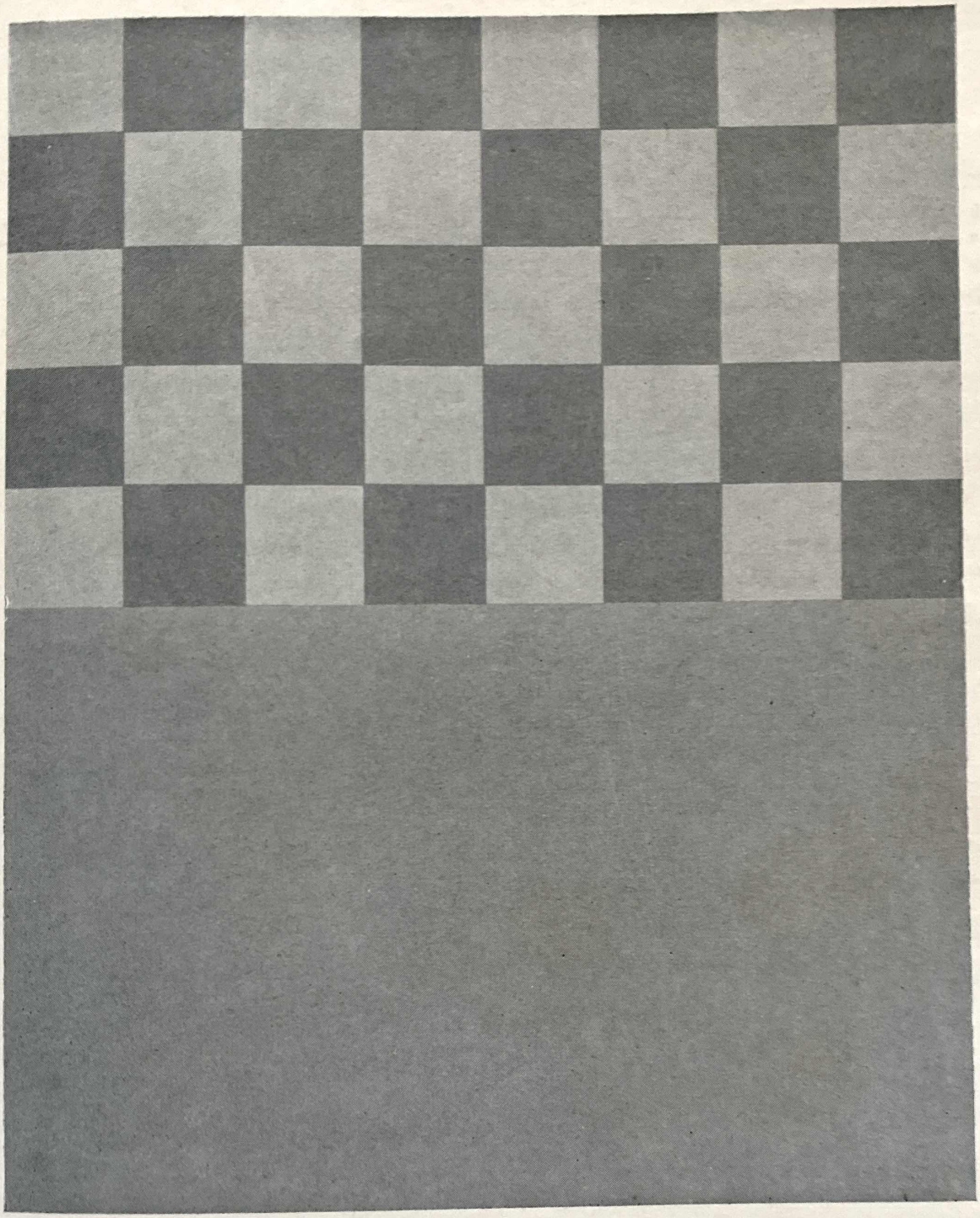


PLATE 44. TONAL GENERALIZATION.

learns that his efforts must be founded on the actual appearance of things and not on what is superficially apparent.

Perhaps before other men it was the artist who, in basing his knowledge on sensation as distinct from subjective concepts, remarked on the complete changes which took place in visual phenomena when the things they represented were viewed from different foci. This cardinal truth is the foundation stone of the craft of painting and was the great lesson which the painter learnt through the visual demonstration of his theories. This lesson also taught him that his provisional theories must remain *sub judice* until they had proved themselves by the return of the desired sensations through pigmental revelation. In this respect the painter is indeed fortunate in that he can so quickly prove the truth or falsity of his definitions.

The human animal, like other organisms, functions within a small range (gamut, field, register, ambit, scope, compass) of sense experiences. Within this range lies the artist's whole activity. (Considered as a definition of the painter's particular task this statement, as we have said elsewhere, does not imply any real difference between the words science and art.)

To understand more fully what is meant by: gamut, range, field, register, ambit, etc., it will be helpful to consider some examples. As far as the sense of touch is concerned the range in which we function without the assistance of extraneous aids (clothing, fire, more or less heating foods, etc.) lies within a few degrees on the scale of recorded thermometric readings, so few indeed that we are made to realize how precarious is our grasp of life. We feel uncomfortably warm when the thermometer marks 110F. and equally uncomfortable when it reaches freezing point. Outside of this range we begin to feel alarmed; to feel that we are nearing the points at either end beyond which we cannot pass and live.

What concerns us here is that within the range of human comfort what we call warmness and coldness are felt relatively. For instance, if we pass rapidly from a temperature of 95F. to 60F. we feel cold and if the process is reversed we complain about the suffocating heat. In this relative way we may therefore describe a temperature of 70F. as warmness or coldness, according to the antecedent basis of relationship.

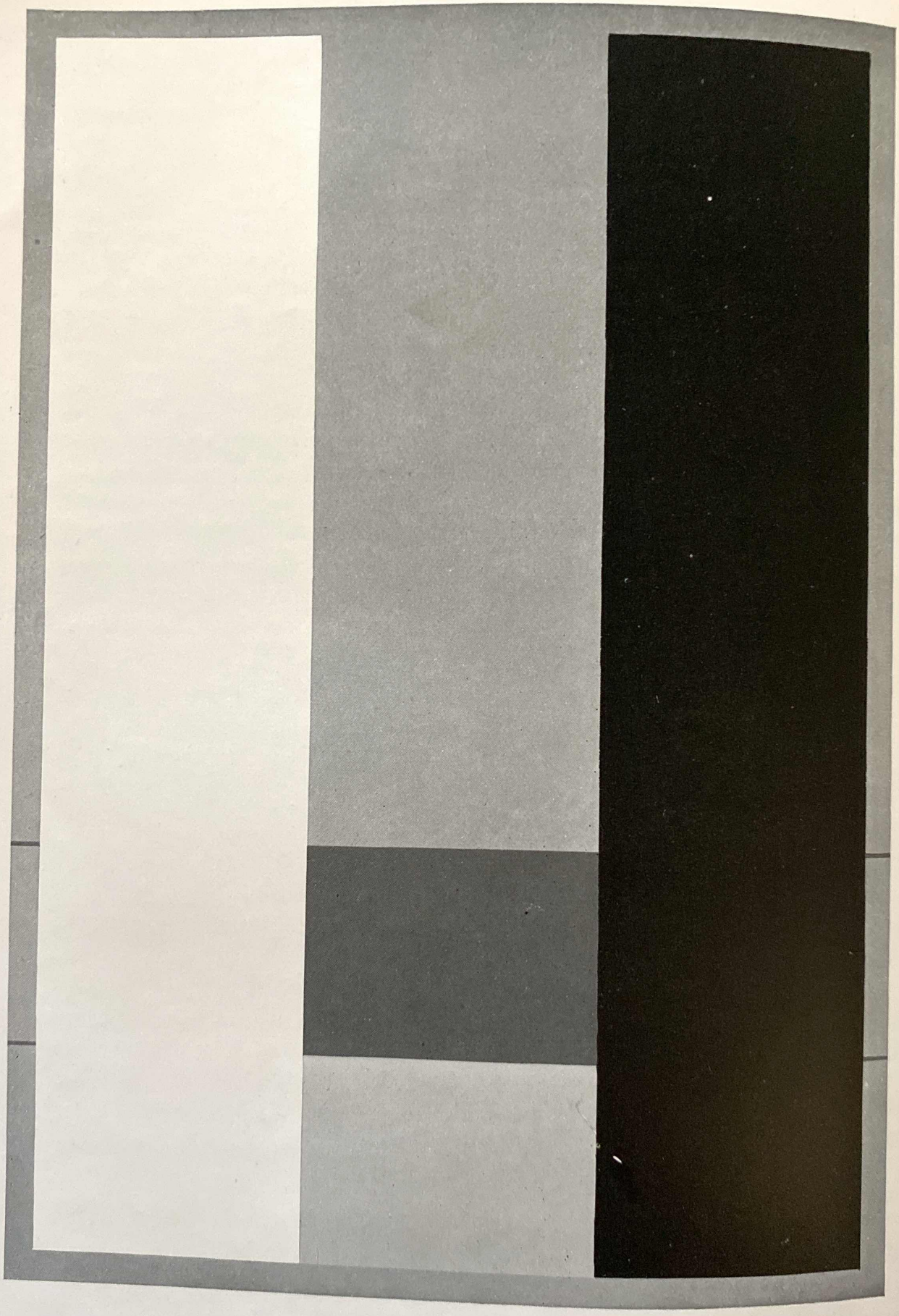
The sense of hearing has its own particular ambit in which effects are again distinguished relatively. The range of human aural discernment does not necessarily coincide with that of other animals. (E.g. It is said that the bat can emit a very high note which while

being audible to others of its species is not heard by man). The human ear discerns intonations within an approximate extension of seven octaves which tends to decrease with old age, particularly in the higher register. Certain harmonics played on the violin, while being distinguishable in youth, become inaudible in later years. This perceptual shrinkage affects other senses in a similar manner. The keyboard of the modern standard piano has been stretched to the utmost limit of the human scale of sound measurement. Theoretically it would be possible to add other strings at both ends and tune them mechanically to the requisite number of vibrations, but the extra notes would be of no use to the human ear since it would be incapable of appreciating them as separate intonations. As the keyboard of the piano stands, its lower notes have become mere rumblings and the highest notes begin to run together giving at both ends little sense of definite differences of intonation. Differences of intonation are most clearly marked in the middle of the audible register (middle C on the piano). Thus any intermediate note in the register is felt and called a low note in its relation to a higher one and as a high note in relation to a lower note; a loud sound in relation to a quiet sound; staccato is sensed against its opposing quality legato and lento against presto. Examples of these equal and opposite reactions of sensorial impressions could be cited indefinitely but enough has been said to make us realize that man can only think in terms of relationships; whether the bases of these have been conscious or unconscious matters not, the inescapable fact is that he is physically incapable of thinking about any one thing in itself.

Descartes thought to prove the fact of his existence by his well-known dictum, *cogito ergo sum,** without at the same time throwing any light on the nature of the act of thinking. It seems advisable, therefore, to amplify his over-concentrated statement since we believe that all acts of thinking can only proceed from relative bases, whether adopted instinctively or deliberately, to which we would add that the deliberate choice leads to the highest form of thinking. In the painter's particular field of activity good work of a secondary order has been produced by a more or less instinctive reliance on relative appearances but the work of the great masters shows by contrast the deliberate choice of and adherence to bases of relationships in all the visual factors dealt with. In view of this we would prefer to say, †*refero ergo cogito, cogito ergo sum.*

* I think therefore I am.
† I relate therefore I think, I think therefore I am.

A B C



A B C

DIAGRAM 45. THE TONAL EQUATOR

Lesson Notes:

"If you think something should be made bigger don't immediately run to your canvas to make it bigger. Hold back and think a bit more. Consider that we only see a thing in relation to other things and perhaps instead of making it bigger we ought to be making things around it smaller. You cannot repeat to yourself too often that a degree of lightness can only be recognized in its relation to other tones lighter and darker; a quality of colour in its contrasts with other colours warmer and colder and a sensation of form in its affinity with others bigger and smaller, harder and softer, etc. Get this important idea into your system until you act on it instinctively and you will find that not only will painting become possible but that the whole world around will have become invested with a new meaning and a greater beauty."

. . . . .

"Look over your work and try to make a relationship that you did not make yesterday. Keep on adding to these relationships until all the parts of your picture have been related to each other. If you made a hundred relationships yesterday and add another hundred today your work will be so much nearer to a satisfactory completion."

The Tonal Equator

Proceed now from what has been said concerning aural and tactile experiences to parallel observations concerning ocular phenomena. The keyboard on which the painter plays is tonally bounded by the purest white and the richest black. The tonal extension which these pigments provide is approximately the region in which visual intonations are perceptible. Outside of this compass darks are—to continue an analogy—mere rumblings and lights "chap-chappings." As in sound, intonations are most easily sensed in the middle of the human register—*the middle tone.* But whatever words may be used in the description of visual phenomena they must, to have an exact meaning, be related to what can be sensed. Diagram 45, on page 108, will show how this term *middle tone* is connected with the relative sensation which it is intended to describe. It consists of five tones, AA the lightest, CC the darkest, marking the full tonal extension contained in the diagram. The strip BB is divided into three tones, in this order, the lightest at the bottom, the darkest immediately above it, and the intermediate on the

top and occupying the largest area on the strip. The upper part of BB is the middle tone. How has it been sensed and painted as such? A tone darker than AA and lighter than CC was mixed and laid on the top division of BB after which it was accorded up or down until its contrasts with AA and CC made forms of equal speed value on both sides. This equality of speed value is the proof that this portion of BB was tonally equidistant from both ends of the scale (AA, CC).

To assist further the understanding of the terms *middle tone* and *speed value,* the darker and lighter tones at the bottom of BB have been introduced. Both of them provide forms on either side. The darker tone, unlike the middle tone above it, makes contrasts of unequal speed value, greater against AA and lesser against CC. In the bottom tone in BB the greatest speed value is found against CC. What then is the effect of these unequal speed values? With partially closed eyes the darker strip will tend to coalesce with CC forming a shape suggesting part of an inverted key while the lower and lighter tone will incorporate itself with AA to form the letter "L." Nothing like this happens when the upper part of BB is seen under the same conditions for here the forms on either side remain equally distinct, i.e., they have an equal power of survival.*

. . . . .

Lesson Note:

"On any proposition there is always one tone which occupies a bigger area than any other. This is the dominant tone. Note it carefully as a basis of relationship for it is much easier to appreciate the true value of a tone on a large surface than on a small one, just as it is easier to see the tree than the leaf."

Visual Demonstrations of False Concepts Deriving from Relationships

Although the principle of the opposite and equal reactions of sense relata will be readily accepted the extent to which they operate in the sphere of appearances is greater than most people imagine. Alone amongst thinkers, the painter by the very nature of his work has been forced to recognize just how far he may be induced to form false concepts about what he sees since he has been made painfully

* In Chapter III, Keynote, this power of survival or speed value will be further exemplified.

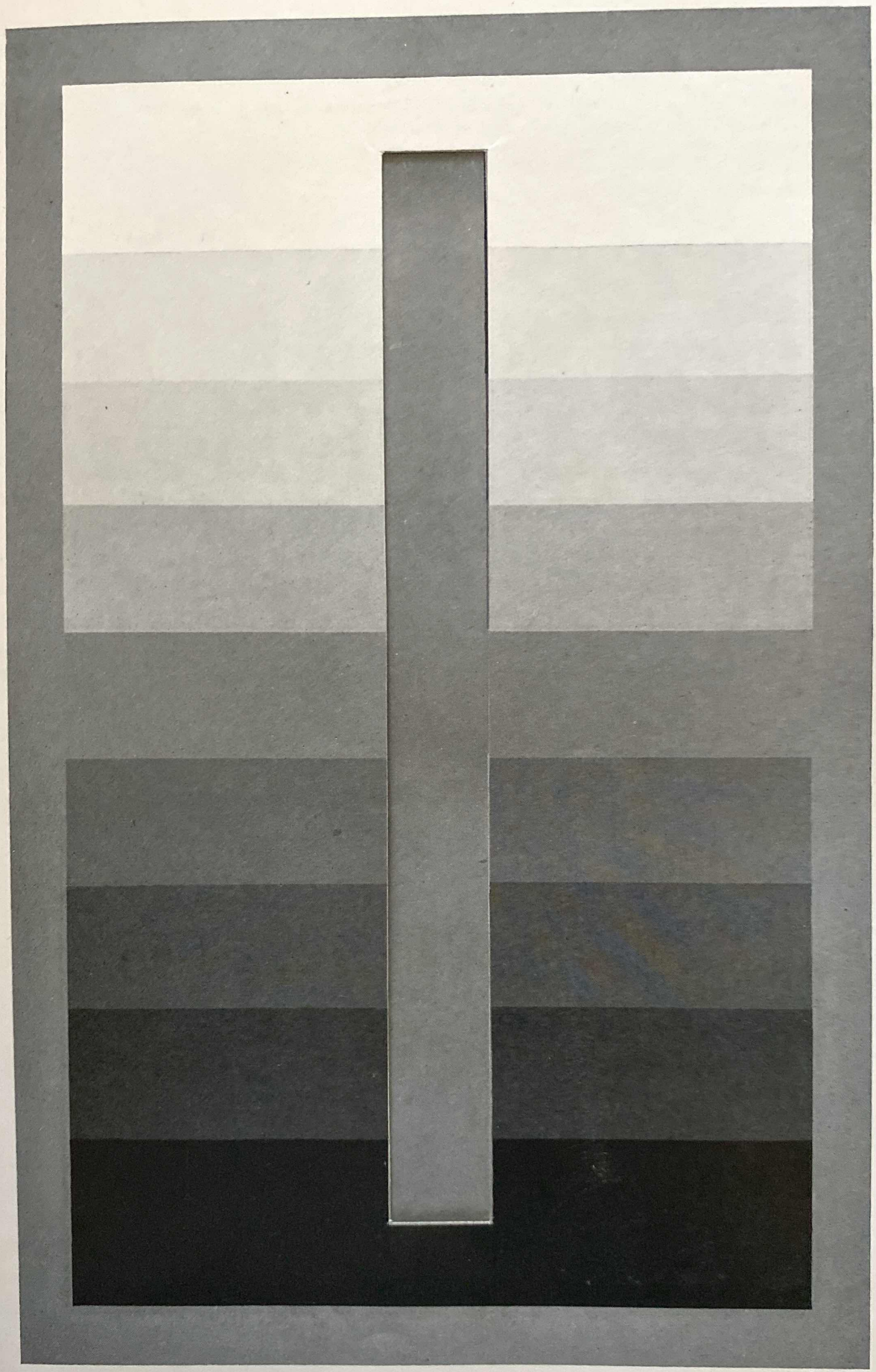


DIAGRAM 46A. ILLUSIONS DERIVED FROM TONAL CONTRASTS

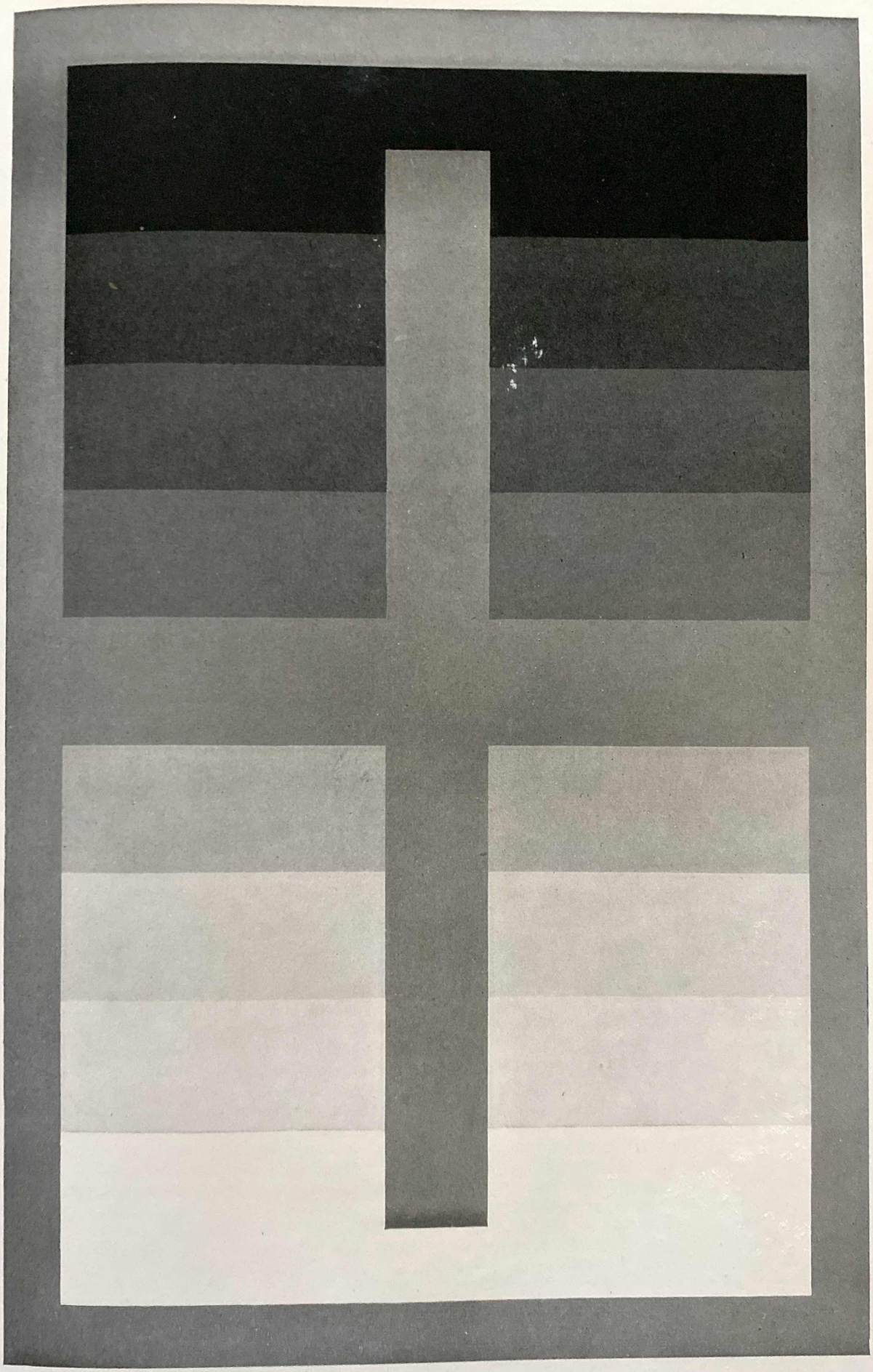


DIAGRAM 46B.

aware that valid results can only come from demonstrated statements and not from illusions.*

The diagrams 46 A and B on pages 111 and 113, show how relationships may trick the mind. Plate 46A superimposed on plate 46B is composed of a set of nine horizontal strips ranging from black to white (the complete tonal extension) intersected by a vertical strip corresponding in tone to the middle horizontal strip. This tone lies in the middle of the complete tonal extension in the diagram and the intermediates on each side have been accorded to produce horizontal forms of equal speed value throughout. The border of the diagram is a continuation of the middle tone.

The most outstanding of the false concepts induced by this diagram which belie the above description is provided by the vertical patch of tone in the middle. Although of the same tone throughout this strip appears lighter at the bottom. If the page is now turned diagram 46 B will show this identical vertical strip lighter at the top. The rest of the diagram 46 B is the same as 46 A except that it has been turned upside down. Therefore the different appearances of the strip observed in these two ways is caused by a reversal of tonal contrasts. Turning back to 46A we note that while the middle strip appears to be darker at the top the horizontal strips act in a similar manner. In 46B the effect is reversed. The reason for the strange behaviour of these dispositions of tonal differences hinges on the law of opposite and equal reactions which can be expressed as it concerns appearances in this way:—

* "Here I pause for one moment to exhort the reader never to pay any attention to his understanding when it stands in opposition to any other faculty of his mind. The mere understanding, however useful and indispensible, is the meanest faculty in the human mind and the most to be distrusted: and yet the great majority of people trust to nothing else; which may do for an ordinary life, but not for philosophic purposes. Of course, out of ten thousand instances that I might produce, I will cite one. Ask any person whatsoever, who is not previously prepared for the demand by a knowledge of perspective, to draw in the rudest way the commonest appearance which depends on the laws of that science—as for instance, to represent the effect of two walls standing at right angles to each other, or the appearance of the houses on each side of a street, as seen by a person looking down the street from one extremity. Now in all cases, unless the person has happened to observe in pictures how it is that artists produce these effects, he will be utterly unable to make the smallest approximation to it. Yet why?—For he has actually seen the effect every day of his life. The reason is—that he allows his reason to overrule his eyes. His understanding, which includes no intuitive knowledge of the laws of vision, can furnish him with no reason why a line which is known and can be proved to be a horizontal line, should not *appear* a horizontal line: a line that made any angle with the perpendicular less than a right angle, would seem to him to indicate that his houses were all tumbling down together. Accordingly he makes the line of his houses a horizontal line, and fails of course to produce the effect demanded. Here then is one instance out of many, in which not only the understanding is allowed to overrule the eyes, but where the understanding is positively allowed to obliterate the eyes at it were: for not only does the man believe the evidence of his understanding in opposition to that of his eyes, but (which is monstrous!) the idiot is not aware that his eyes ever gave such evidence. He does not know that he has seen (and therefore *quoad* his consciousness has *not* seen) that which he *has* seen everyday in his life.—*De Quincey.*

Any quality of any factor contrasted with another quality of the same factor affects the other and is itself affected in ratio with the extension between the qualities related.

(For example, a warm colour is felt as such in relationship with a cool colour and the two colour sensations are affected in ratio with the extension between warmness and coolness).

All this being understood, the law is demonstrated in the central strip 46 A where on the upper half any darkness contained therein is affected by opposing qualities of relative lightness while in the lower half its dark surroundings progressively affect its qualities of relative lightness. For the same reason the horizontal strips are denatured by contrasts of relative darkness and lightness on their tops and bottoms. (Natural schemes of light phenomena abound in similar deceptions, e.g., the distant mountains in the Japanese print, plate 13, page 264, which appear darker against the sky than against the trees underneath. With such subject-matter before him the inexperienced student would almost infallibly fall into the trap, trust to his superficial theories and paint the mountain lighter against the trees only to find that for some inexplicable reason he was unable to fit all the pieces of his tonal jig-saw puzzle into their respective places).

The student is earnestly recommended to copy diagram 46 B as an exercise which will teach him how far he must mistrust theories and how far he may leave correct tonal relationships to play the same antics on this exercise as they do in actual nature.

Any scheme of visual phenomena contains its lightest and darkest parts and these tonal extremes have definite extensions which vary more or less in the infinity of the painter's problems. Now, since the middle or indeed any intermediate tone can be compared in its appearance of lightness against the darkest and darkness against the lightest it follows that there are always two tones in any visual problem which do not provide this double check or support—the lightest and the darkest. Accordingly, in solving his problems the painter can only *provisionally* mark the tones intended to represent the lightest and darkest. These approximations laid down the use of any intermediate tone compared with the two extremes, provides the only means by which he can determine the complete extension. This method of tonal mensuration takes the painter back to the region of pure sense analysis (Column II), page 36—the only source of practical theories. In other words, since the art of depiction is a universal language it can only live on condition that it has

been derived from sensations which are universal, and not from fashionable subjective perceptions and conceptions which come from within.

In any of his problems, although the painter uses more than one intermediate tone, theoretically and practically only one is necessary to allow him to mark the full extension. Having realized this, he never forgets in using an intermediate tone to make full use of the double support which it provides. In the same way he succeeds in locating other intermediates in their correct extensions within the whole range. This method by which correct extensions can be accurately determined from intermediates is equally applicable to all the other visual factors. Any *colour* problem contains two chromatic degrees which cannot be compared from two sides. This means that the *coldest* sensation cannot be compared with anything colder, nor the *warmest* with anything warmer. As in tone the full extension, laid down approximately, can be determined accurately from some intermediate chromatic sensation accorded to give its exact degree of warmness or coldness between the two extremes. Accordingly any intermediate tint can be called cool or warm according to the comparative approach.

Outside of physical theories the primary colours, red, yellow and blue, are those which concern the art of painting. Physical theories, as we have pointed out when discussing Monet's landscape on page 237, do not concern the painter. The mixture of any of these three pigments makes chromatic sub-divisions which can be named. The most important sub-division is made by what we call *complementary colours*. A complementary colour is a mixture of any two of the primaries in its relation to the third. The mixture blue and yellow, easily named green, makes the complementary to the sensation called red. Purple (the mixture of blue and red) is the complementary to yellow, and a rich orange sensation (yellow and red) the complementary to blue. Being the most important sub-division or mixture it follows that green enhances red to the highest degree possible, purple glorifies yellow and orange exalts blue.

Here again as in diagrams 46 A and B, pages 111 and 113, traps abound for the inexperienced who can easily be misled by relationships acting automatically and from false concepts based on superficial feelings which prompt him to caricature his chromatic contrasts. By not allowing these relationships to act automatically as they do in nature he will be unable to define and lay down his factors in their exact nature. For instance, he attempts to paint a head against a green background. Under these con-

ditions he sees the red element in the skin complemented to its highest degree and paints it as he thinks it is, with the result that his picture portrays his model looking like a boiled lobster. With greater experience he would commence work knowing that the red appeared redder than it actually was in such a contrast. For the same reasons the background will look in an equal degree greener. An orange yellow background would make him too liberal with his blue paint and a purple too extravagant with his yellow.

. . . . .

Lesson Note:

"You're worrying about colour? Well, forget about it. A child could pick the right colour, and even if you had the right colour every time you put your brush on the canvas it would only look right in the right tone. Remember that an infinitesimal difference of tone is all that lies between a colour which appears dull or vibrating. Keep tuning your tones and your colour difficulties will right themselves."

. . . . .

Once again, colour sensations are elementary in the sense that they have the quickest appeal to the uncultured eye while possessing the least intellectual interest among visual factors. Nevertheless they must be noted in their orders of cerebral awareness and dealt with in the development of a picture as they become major differences between the painting and the subject. Failure to do this results in the balance of the factors in the problem being upset—the beginning of mental confusion. For the student, colour differences, or at least as many of them as require attention in the initial stages of the work, can be dealt with easily. Firstly, a colour can be noted as a red, a blue, or a yellow. After which, these primaries in this order can be classed as a type of red verging towards the sensation of orange or purple; a blue as purple or green-blue; yellow as an orange or green-yellow. Insofar as it is found difficult to make this classification so can these colours be considered pure elements. E.g., if it were impossible to say that a red could be thought of as an orange-red or a purple-red it would be, *ipso facto,* pure, and this holds good for the colours blue and yellow. The same simple classification can be used in the consideration of complementary colours, a green may have a larger or smaller proportion of the two elements which compose it, a purple more or less red or blue and an orange more or less yellow or red. Another category in colour sensations can be called *neutral* tints, for the reason that they are complex mixtures of the three pigments and cannot be readily named. All that we require to say about them is to class them as neutral tints relatively warm or cool.

It is opportune here to draw attention to a sensation emanating from the colour characteristics of any material in itself. This we can call a sense of dignity or *continuity*. For instance, we observe a face and note that the colour of the skin leaves no doubt that it is the same from its brightest parts to its darkest. Chromatically, it is dignified and continuous. Observe a badly done portrait and we are likely to see that in the transition from light to dark the colour, which is consistent in natural schemes, changes. At one part it appears yellower, at another part bluer, sometimes to such an extent does the colour vary that one might be induced to think that the person portrayed was suffering from some skin disease. In such a work the eye is dragged down to the consideration of small chromatic differences from which we sense a lack of dignity which never exists in nature's chromatic schemes. It is this quality of "oneness" not alone in colour, this observance of natural laws which gives to "The Maids of Honour," plate 10, page 242, its sense of majesty.

Sensations of planes in their angles of inclination and spatial degrees are revealed alone by appositions of lights and darks (tonal relationships). Added to this and what we have not yet noted, degrees of lightness and darkness affect sensations of *size,* which are accepted instinctively without necessarily having conveyed exact knowledge of how far they might have deceived the brain about their *exact* sizes.

As an instance of a purely instinctive use of fundamental visual laws let us consider an intelligent mature woman wishing to dress herself to appear slimmer. By a process of trial and error she will not dress in light tones, for having seen herself in the mirror so attired she has felt that for some unknown reason she appeared bulkier than when dressed in a costume of some intermediate tone. Now since in both cases her tangible size did not change, how has this illusion been brought about? In the first instance she has seen the lighter coloured costume detach itself clearly from its background, forming a silhouette or track for the eye, revealing the full extent of her bulk, while in the second instance she has seen some parts of her outline disappearing into the background, thus making her appear slimmer. The reason for this difference between tactual and visual interests can be explained. The human eye is not interested in tactual facts; it is interested primarily in forms created by differences of tone and will pass lightly over tangible realities not marked by tonal differences; it will follow a form leading away from a joint tactual and visual fact, thereby distracting attention

from some parts of the tactual outline. As another instance of how the laws governing appearances can be consciously used for a specific purpose, dressed in black and standing against a black background she would almost completely succeed in distracting attention from her tangible outline, although in this case her head and hands would detach themselves tonally and look bigger. So much for aesthetic qualities dependent on tonal relationships, but it must be understood that while the depictive factors as they are considered in this book can be analyzed separately, the attainment of complete aesthetic perfection depends *not on one factor alone, but on the combination of the three.* Considering further this hypothetical woman prepared to use all the expedients at her disposal, let us see how she might assist herself by a judicious use of *formal* as distinct from other relationships. Let us picture her dressed in a material with a horizontal stripe or in the same material with the stripe running vertically. In the first case she will appear to be shorter and broader, and in the second more elongated and thinner. These ideas are created by the behaviour of the eye which in running along forms tends to gather momentum in ratio with the speed value of the tonal extension making the form. Following the horizontal tracks the momentum acquired carries the eye over in imagination into parts where the form has disappeared. The mind then is interested in breadth which quality it explores as far as possible, inducing the idea of breadth. For the same reason the vertically striped dress will take the attention away from feelings of breadth to the magnification of feelings of height. So much for what she may do to simulate a youthful contour through a careful choice of forms and tones. From manipulations of *colour* she can get little assistance, for as we have already pointed out the eye runs along forms, and in addition, in its course along ocular tracks will pass unhesitatingly across changes of colour. Theories on colour are of little practical use for the purpose under discussion. We say of little practical use although if we saw a person dressed in red against a background of the same tone and colour our attention would be taken away from the tactual outline of the body. But since we cannot change the background to suit the occasion any theories governing sensations derived from colour contrasts are in this case unpractical. All that can be said here is that she should choose as far as possible colours which have some affinity with the general colours seen in nature. This means that primary colours should be avoided since they are rare and in the order of this rarity attract the eye more or less to the exclusion of other interests. If such colours are chosen, however, they should be used in natural proportions.

We leave now this woman to take care of her own affairs to point out that what is felt to be good taste does not depend on personal caprice, but on the laws which govern visual phenomena. These laws, inasmuch as they can be defined and understood, find their applications in all human arts and crafts: the designing of carpets, draperies, furniture, jewellery, bookbinding, clothes, machines and last but certainly not least, architectural plans for public buildings and gardens.

Diagram 47, page 123, demonstrates tonal relationships affecting sensations in size. The white square A is the same size as the black B, although at first sight A appears bigger. Partially close the eyes and these apparent differences will become magnified to such an extent that anyone might be pardoned for taking a pair of compasses to verify them. These fictitious differences of size are entirely produced by different tonal arrangements.

Why the mind should be tricked by these phasma of relativity we must leave to the physiologist, since here we are only concerned with facts of ocular behaviour. Physiological theories as they concern the physical nature of the organ of sight link themselves intimately with the art of painting. They form an alluring side alley into which artists sometimes stray. But, however fascinating these excursions may be, the painter, when he settles down to his own job must retrace his steps and come back to the empiric facts of vision whatever their physiological natures may be. With these restrictions and with all due respect to the science of physiology the reasons that we give for the apparent differences, A and B shall be defined from the basis of ocular behaviour. Thus, **in ratio with its intensity of brightness a tone will appear to encroach on darker tones.** Similarly, from the other end of the scale a dark tone will appear more or less smaller in contrast with degrees of lightness. Because of this the central square in A appears to absorb part of its black border, while in B the light border subtracts from the black square. The abstract line running round B being balanced by the same sensation of lightness on both sides stays in position round the whole square, whereas the same sized square A has been encroached on every side by a lighter tone.

Diagram 48, page 123, demonstrates another ocular caprice, occasioned this time by relationships of size. The white circle surrounded by five big ones appears smaller than the same sized circle surrounded by ten smaller ones. The apparent law governing appearances of size is obvious but we may as well state it: **Bigness reacts against smallness in ratio with the extension between these two qualities.**

In formal distinctions the law of equal and opposite reactions operates in the same invariable way; feelings of straightness related to feelings of crookedness produce feelings of greater straightness and crookedness. Longness to shortness, horizontality to verticality, roundness and squareness and so on. To conclude this brief analysis of a few of the many traps (they could be cited indefinitely) diagram 49, page 124, shows how forms can appear travestied by their reactions against other forms. The diagram shows four different angles of inclination at war with the roundness of a perfect circle, making it appear in the form of a gibbous moon.

To see this circle in its true degree of roundness it is sufficient to close the eyes partially and the left side will appear to reform itself. The reason for this is that the lines run together to appear as a generalized tone, thus abolishing the sensation of inclination and angularity, thereby leaving the circle free from competition and able to show itself in its true nature. Note further how this conflict of irreconcilables affects the outside boundaries of the diagram. The right hand side appears to incline from both ends towards the right, preventing it from appearing a straight line; the left side appears higher than the right, and the combination of the two illusions make it impossible to feel the perfect rectangularity of the whole diagram.

. . . . . .

Lesson Notes:

"Be forever on your guard. Nothing is more deceptive than appearances. Nothing is more false than the accepted axiom: 'Seeing is believing.' It is not enough to paint what you think you see. You must find out what you actually do see. Remind yourself always that however far you may advance in this difficult craft, you will never be completely immune to all the insidious suggestions made by the kaleidoscopic arrangements of your visual relata."

. . . . . .

"If you ask a question about relationships of tone, form or colour and do not receive an answer immediately, say that no difference exists. Ask questions about other relationships until you find a ready answer. Some of the questions posed in earlier stages find easy answers at a more advanced stage. This is only another way of saying that painting is the art of dealing with the obvious."

. . . . . .

"Infinitesimal degrees in tonal relationships make all the difference between a painting vibrating with light and space or a dead wall of paint."

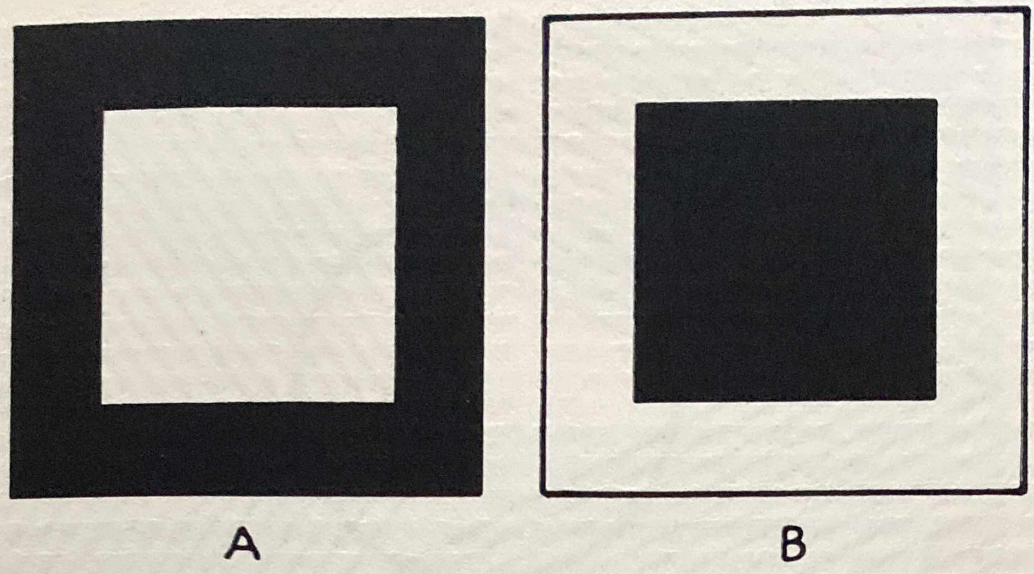


DIAGRAM 47. SENSATIONS OF SIZE AFFECTED BY TONAL DIFFERENCES.

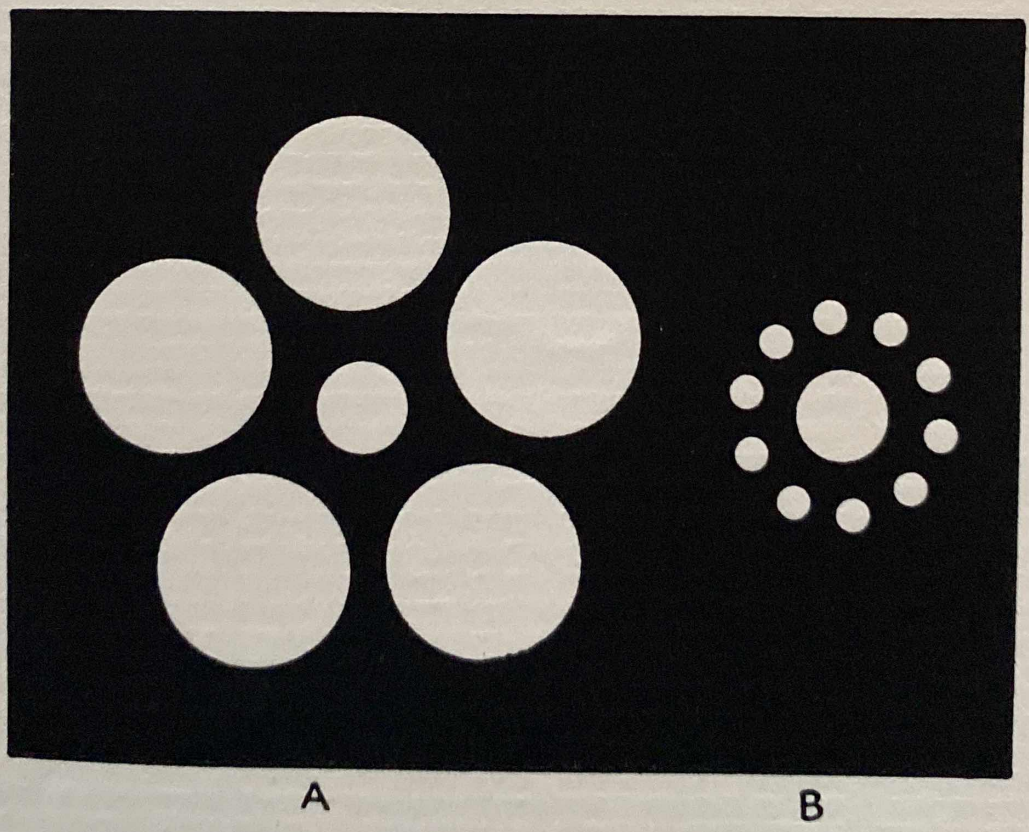


DIAGRAM 48. SENSATIONS OF SIZE AFFECTED BY CONTRASTING SIZES.

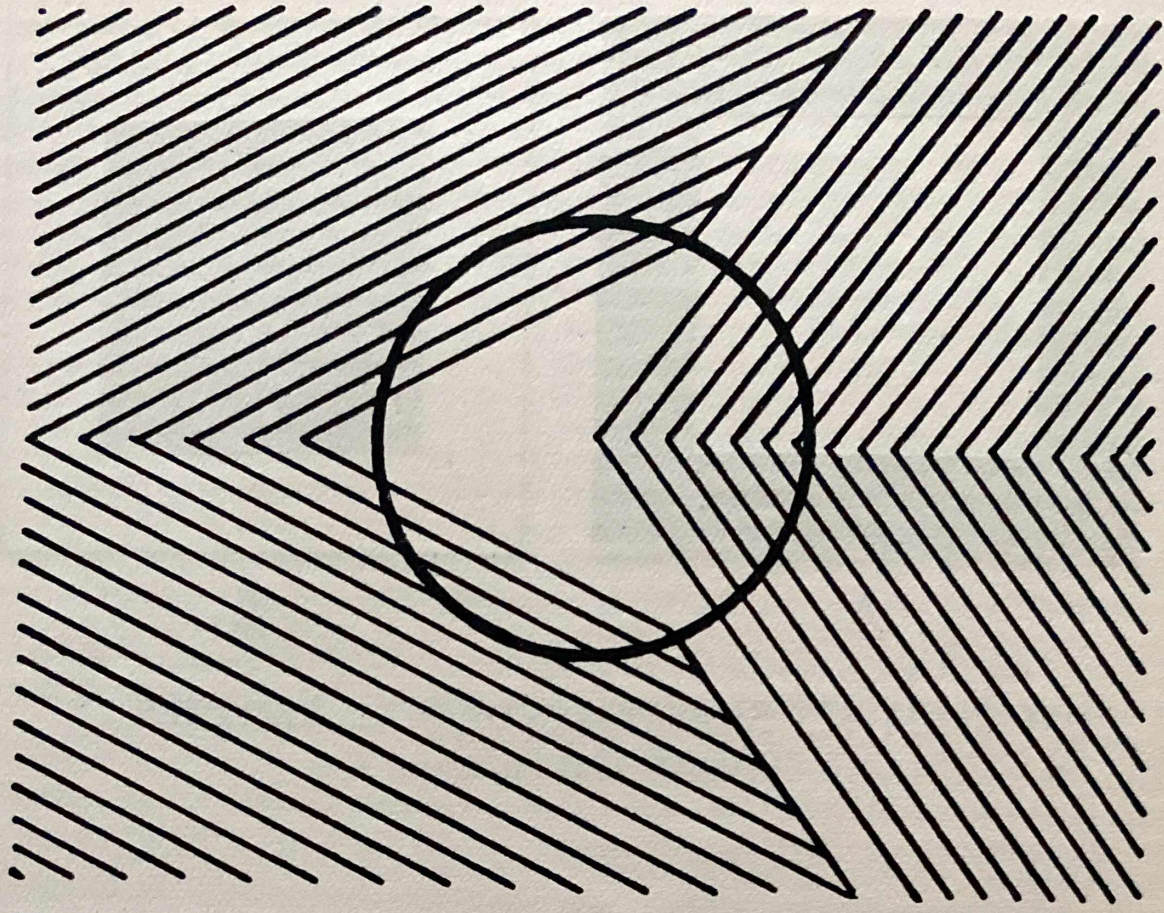


DIAGRAM 49. ANGULAR AND CURVILINEAR CONFLICT.

CHAPTER III.

Keynote

SO FAR WE HAVE SPOKEN ABOUT RELATIONSHIPS WITHIN THE perceptual ambit of intonation and have demonstrated some of the traps which help to complicate the craft of painting. On the road to complete mastery there remains now only one step to take—the *conscious choice of the keynote in which tonal relata should operate.*

Before defining *keynote* let us enumerate the stages through which the painter must pass before arriving at this final phase of his development. In the early part of his career his whole attention must be given to the study of tonal relationships and the relative forms which they make. During this long and hard period he is required to learn not only how to think as a painter but in addition how to control paint and make it express, as adequately as possible, his thoughts and definitions. In this stage it is sufficient if he succeeds in controlling his tonal relata in any possible key.

The majority of painters never pass this stage, but to him who is destined to become one of the great a time comes when the management of his tonal relata becomes easy enough to leave him with a surplus of energy. This excess of strength can from then onwards be used in the consideration of the keynote or pitch in which his relata operate to the best advantage. This point marks the advent of a great artist.

Keynote is the disposition of a set of tonal relata consciously pitched within the tonal extension of the medium.

This statement holds good with the obvious exception that if the extension required exceeds the pigmental extension the question of keynote is automatically decided, since a conscious placing up or down can only be made where the extension required is less than the pigmental range. (As examples of effects outside of the pigmental range, consider a sunset, highlights on black polished material, to cite only two). Such problems of tonal extension cannot be translated adequately, if at all, and in order to steer clear of unnecessary discouragements it is just as well that the student should be aware

that it may be possible sometimes that his failures may be due to the tonal limitations of the medium and not to his own shortcomings. Let him, therefore, reassure himself; leave such subjects alone, for nature abounds in visual problems with a reserve of lightness and darkness within the pigmental extension in which it is possible not only to establish correct tonal relata but also to move them holus-bolus up or down.*

The conscious choice of keynote presents its own particular difficulties. Out of many let us examine one of the most important. Imagine a painter painting a portrait of a man in a dramatic light (i.e., an analytical problem of a scheme of tonal relationships exhausting the full range of his tonal keyboard). His model is dressed in a black coat which, considered in the ordinary way as a coat, contains all its appurtenances (subjective ideas of folds, lapels, buttons, etc). His eye, a heliotropic organ, will automatically pass over many details in the lower half of his tonal extension to become interested in what happens in the treble of his scale. He will note many details in this register which he will unconsciously overstate in order to be sure that they reveal themselves unmistakeably. The result of this is that when he has reached the middle tone it has drifted down so far that he no longer possesses sufficient reserves of darkness to permit the same amount of details in the lower register. Accordingly the tonal intonations necessary in the interpretation of buttons, lapels, folds, etc., have to be squeezed in until his whole picture in the higher register becomes overcharged with visual incidents, and in the lower, empty.

The only way to prevent this lack of balance is to view the problem first of all as a whole and to place an approximate middle tone to be compared in its relation of lightness and darkness with the two extremes. This permits us, as we have already said, to place the complete extension so accurately that to the end of the work little change is required. This done, it is clear that if the middle tone is accepted as such, details within the upper and lower register must be found within this fixed barrier on either side.

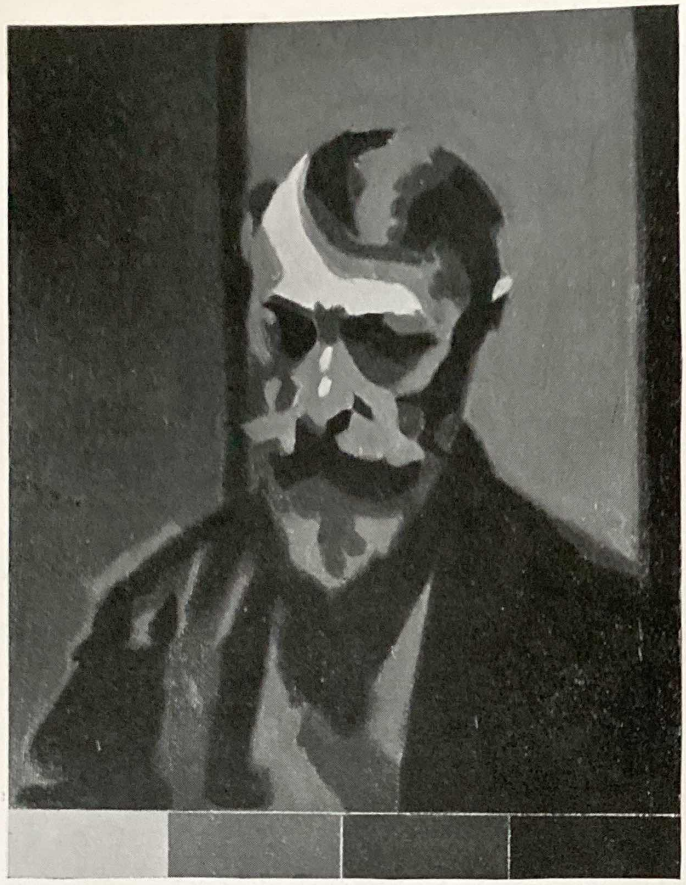
The development of the science of appearances is that of a special kind of knowledge which from the time of primitive man has been progressively built up by the addition of experiential data, and this development has moved in the same way in the individual as in the whole race. The modern child begins his depictive experiments in the same way as his craft ancestor (cf. Cro-Magnon, plate 2, page 233).

* "How in all travels one may learn. This benign nature so provides that over all the world you find something to imitate."—*Leonardo da Vinci.*

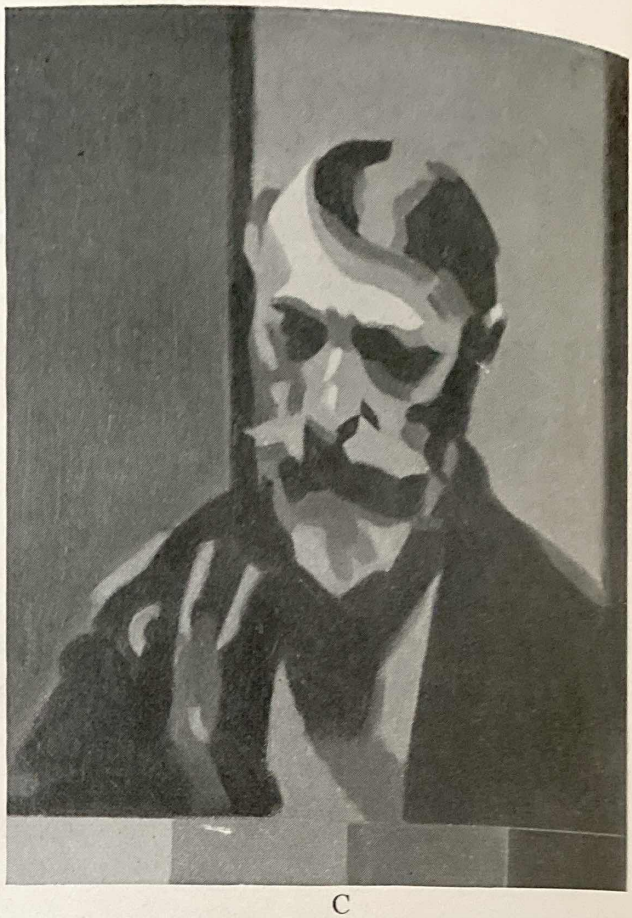
PLATE 22

"DAFFODILS"
(Painted 1943)

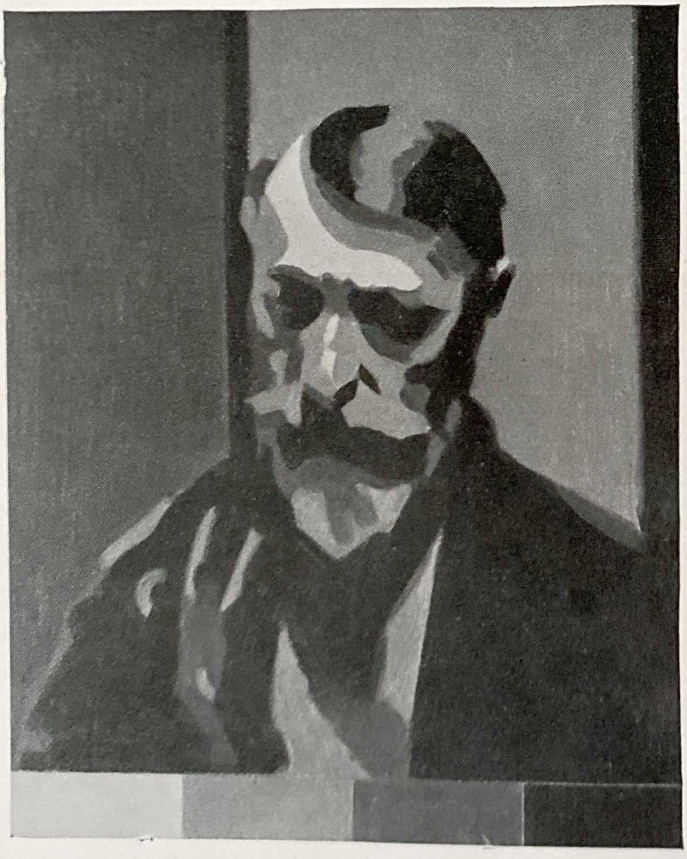
MAX MELDRUM



A



C



B

DIAGRAM 52 A, B, C.

VARIATION OF EXTENSION AND KEYNOTE.

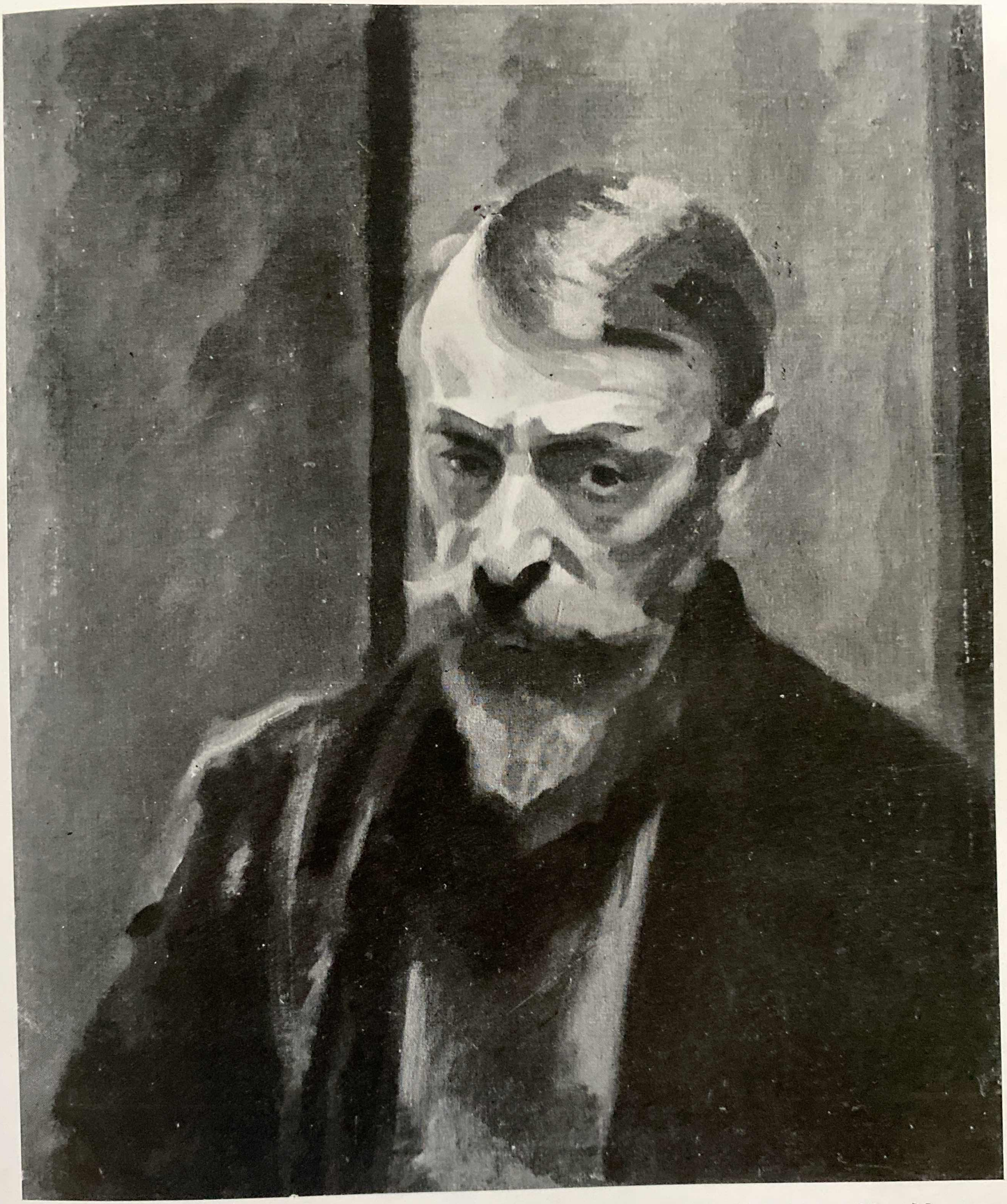


PLATE 53

MAX MELDRUM

SELF-PORTRAIT
(Painted 1933)

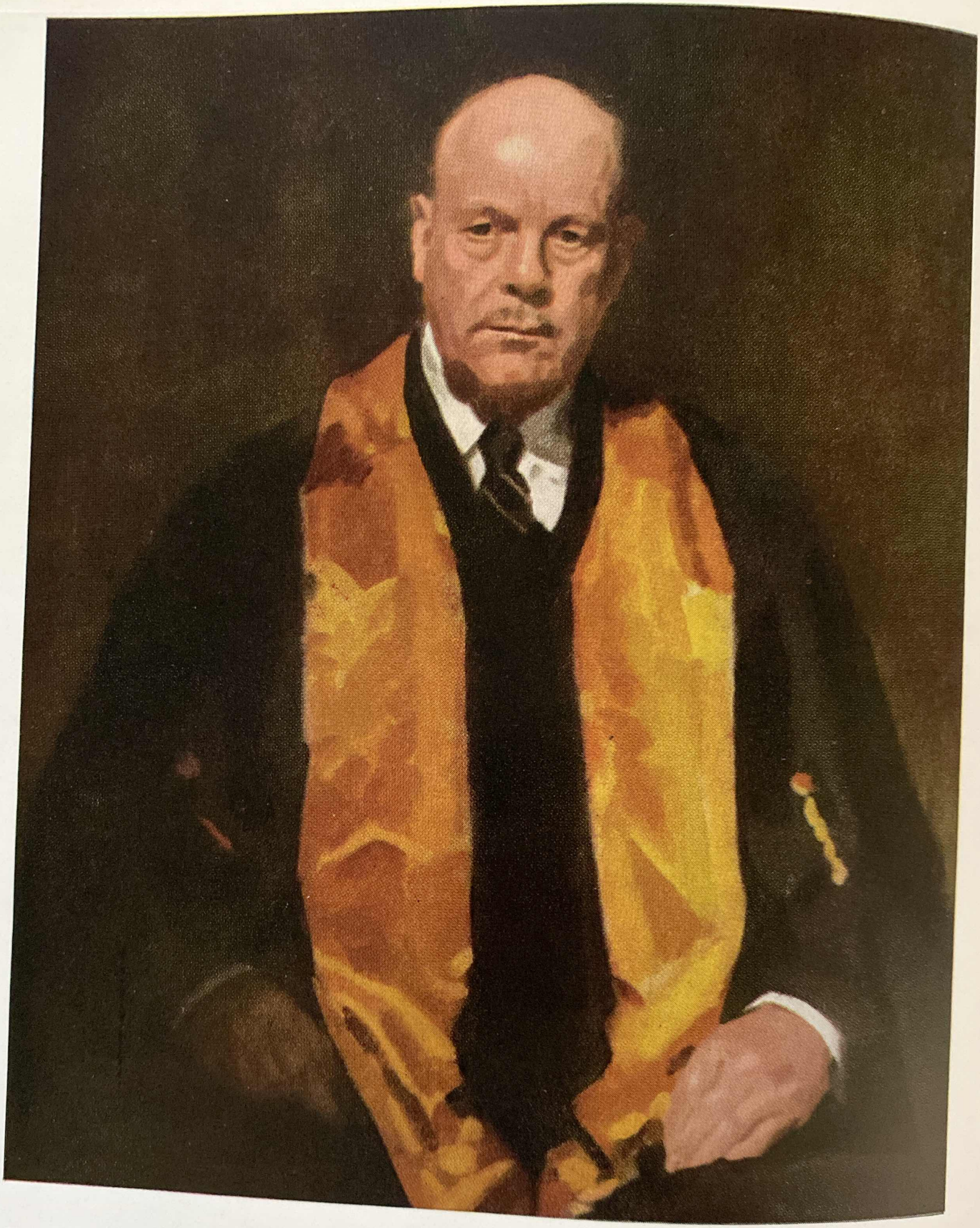


PLATE 85

Dr. FORBES McKENZIE
(Painted 1940)

MAX MELDRUM

MAX MELDRUM

PLATE 87

PAMELA BLAKEBROUGH
(Painted 1945)

PLATE 86

MAX MELDRUM

Mme. MELDRUM
(Painted 1908)

PLATE 54

MAX MELDRUM

Mrs. GOVETT
(Painted 1947)

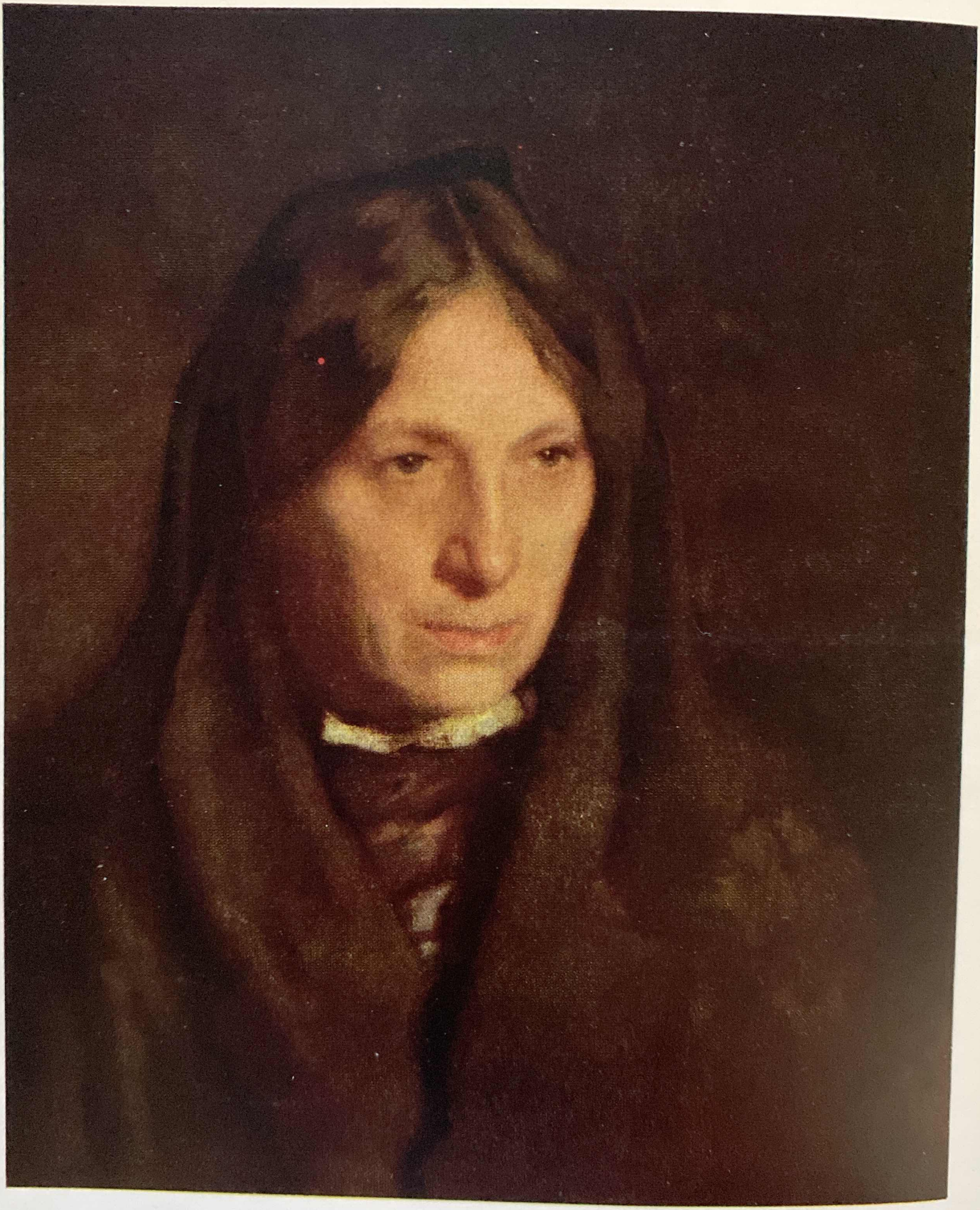


PLATE 55

MAX MELDRUM

"PORTRAIT OF THE ARTIST'S MOTHER"
(Painted 1913)

He cannot jump over any of the stages in this invariable development even if his father was the greatest artist alive and if he is to become one of the significant painters of his time he must know all that has been learnt since man started to depict and in the order in which it developed. As the reader is by now aware, this development grew from simple elementary knowledge of shapes and colours assisted by readable symbols, leading to the consideration of tonal relata revealing the third dimension and culminating in the conscious control of the keynote in which tonal relata operate most advantageously. In the history of depiction the control of keynote was first demonstrated in the work of Velasquez. As court painter he was given the job of retouching and sometimes changing and adding to existing pictures by other artists. All his retouching and changing in parts shows a sense of general unity pointing clearly to the fact that he must have deliberately chosen a tonal basis from which to work, knowing that without this adopted basis unity would not be felt. How far he did this consciously or instinctively matters not, the effects with which we are at present concerned are visible in these paintings.

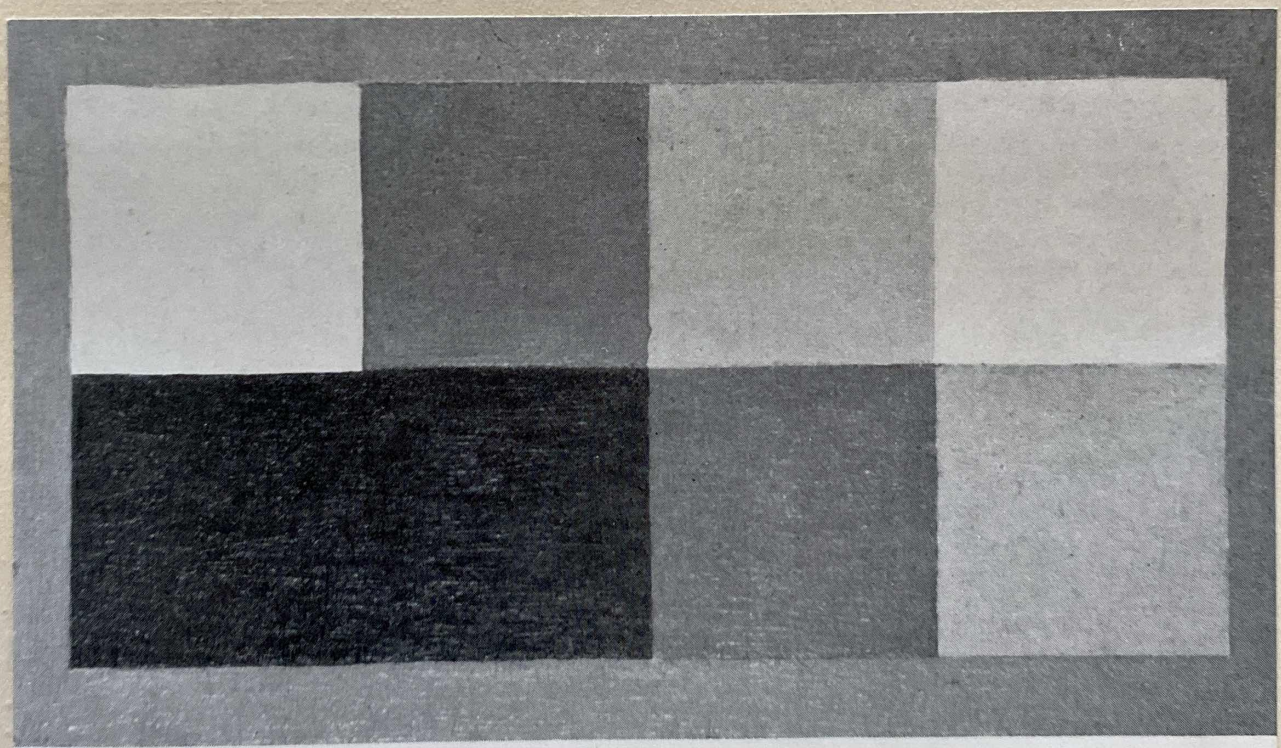


DIAGRAM 50. FORM OF EQUAL SPEED VALUE IN THREE KEYNOTES.

Diagram 50 above shows the exact application of the abstraction keynote in terms of visual reality. We see here eight squares revealed by differences of tone, the six on the right have been accorded (vertically) in equal tonal extensions. The horizontal form run-

ning between them necessarily possesses the same speed value. The white and black squares on the left of the diagram show a much greater extension than the other squares. The form between these two has therefore a higher speed value than the one of equal speed value running through the three pairs of squares to the right. The left hand pair of squares has been added to show how equal extensions of tone automatically create forms of equal speed value. Note how the speed value of the horizontal form in the middle of the diagram is suddenly accelerated and how if the mind is allowed to relax the eye will run to the left side of it. Outside of our present consideration of keynote the reader can again discern the effects of relativity as described in Chapter II. The various squares, although uniform throughout in value, appear lighter and darker as they happen to be contrasted with lighter and darker neighbours.

. . . . .

Lesson Note:

"You find it difficult to keep the tonal register of your relationships high up? The reason for this is that too many times in the course of your work you have said that something should be made darker instead of saying that other things around should be made lighter. The remedy for this is simple. Proceed cautiously, hesitate before making things darker and then only do this when after due consideration you are forced to the conclusion that it is the only possible course. A celebrated French painter said, *'it takes thirty years of practice to be able to make full use of white paint.'*"

Variation of Keynote in Different Types of Subject-Matter

Diagrammatically figure 51 next page, demonstrates the necessity for the conscious control of the tonal extensions which primarily differentiate the various schemes with which the painter has to deal and the keynotes in which these extensions must be relatively placed. Numbers 1 to 16 mark the total pigmental range of the painter which can be practically exhausted in the painting of objects in the concentrated light of a studio. The first characteristic to interest the eye and mind in passing from a studio to open air (plein-air) is the diminution of extension between lights and darks. This change is marked approximately, from 7 to 16. Note here that these measurements are made approximately and as distinct from each other have variations within themselves. Thus, for instance, on a very

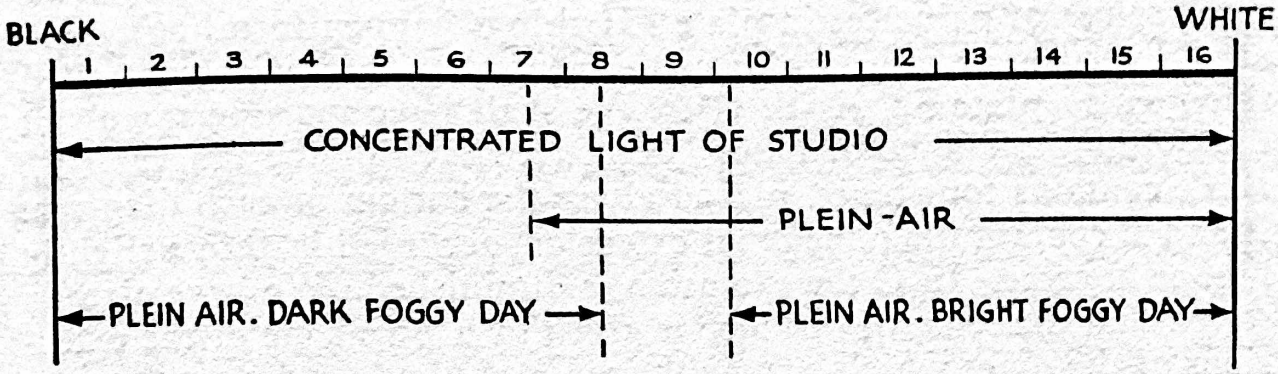

BLACK
WHITE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
CONCENTRATED LIGHT OF STUDIO
PLEIN-AIR
PLEIN AIR. DARK FOGGY DAY
PLEIN AIR. BRIGHT FOGGY DAY

DIAGRAM 51.

bright sunny day the extension is placed between 7 and 16; on a dull day between 10 and 16. So it follows from this that the first question the painter should ask himself concerns the tonal extension in the subject under consideration. The answer being found, if the subject in its tonal extension happens to leave a reserve of lightness and darkness in the pigmental range the question of keynote follows. If, for example, the compass of the extension is contained within 4 and 14, a reserve of 3, 2, 1, will exist at the bottom, and 15, 16 at the top. There is therefore room here to manipulate the extension with its interrelated tones up or down. The subject-matter allowing this latitude the necessity for the proper choice becomes evident, for if the keynote be pitched too high it will result in the attenuation of the various colours and if pitched too low they will fail to reveal the characteristic of brightness common to outdoor effects. The diagram explains in its own way the difference of keynote in two out-of-door effects—a dark foggy day and a bright foggy day. The extensions marked are in both cases approximately similar but note that they are both more restricted than those imposed by a bright clear day (7 to 16). Further, this comparatively small range becomes more and more restricted according to the density of the fog —a bright intensely foggy day might be contained within 13 and 14.

Diagrams A, B, C, plate 52, page 128, further precise the use of keynote. They are syntheses or generalizations of the obvious family characteristics expressed in plate 53, page 129, in a more fluent way. The application of the word syntheses here can be better understood if we compare A, B, C in plate 52 with plate 53 through the diffusing screen. Under such conditions the diagrams will appear complete, as a smaller edition of plate 53 and this could not happen in the diagrammatic forms were they not scientific syntheses or generalizations of the outstanding tonal characteristics of plate 53. While the basis of any synthesis must be controlled, it must be understood that in

the free use of paint (as in plate 53) things happen fortuitously and are allowed to remain insofar as they do not conflict with controlled statements (plate 52, A, B, C). (We shall have more to say about the deliberate choice of bases later on). Each of the diagrams A, B, C, contains four tones, placed along the bottom of each diagram. A and B contain the same tonal extension, accorded in B in a slightly higher keynote. In C the extension is diminished. We have already stated that the sense of distance is given by a shrinkage of the extensions of the tones which convey the sense of planes and a comparison of A with C will show this law in operation. Summing up, A and B represent slightly higher and lower keynotes, leaving the sense of the distance of the head from us the same. A and C represent a change of tonal extension affecting the sense of distance. Although this sense of distance is apparent to the naked eye it will be more clearly felt if we resort to the use of the diffusing screen or half-closed eyes. Viewing A and C under either of these conditions with the eye fixed on a point midway between them C will appear quite definitely behind A.

To further demonstrate these statements on the cause of the sense of distance contrast "My Lady's Table," plate 70, page 167, with the Corot, plate 21, page 273. By comparison the latter shows the more limited range proper to its subject for although certain parts of it may be as light as the lighter parts of "My Lady's Table," a considerable range in darkness has not been found necessary. In the same way, "Mrs. Govett," plate 54, page 133, demanded a much greater extension than the Whistler, plate 7, page 239, or the Hiroshige, plate 13, page 264.

The Conscious Choice of and Adherence to Provisional Bases of Relationships

We have already commented on the necessity for the mental control of all the factors concerning the craft of painting. This means that a basis in each of these factors must be defined approximately and referred to in all relationships of the same nature, also that these factors can and must be considered individually. What the experienced painter elects to deal with is at first a generalization of many minor visual occurrences. Small details he is content to leave until they become of paramount importance in the orderly development of the work (Cf., plates 71 to 83, in "My Lady's Table" series, pages 168 to 174).

More often than not the failure of the young artist to obtain satisfactory results is because he has allowed the vaguely con-

scious bases of his relata either to be forgotten or to stray; he has allowed his bases to float and has unconsciously attempted to obtain unity by a series of relationships having little connection with the whole of his picture. He has yet to learn that in all the factors which concern visual occurrences unity can only be felt from one particular basis and not from five or six. Put in another way, he has divided his picture into five or six parts; has considered each as an entity and has attempted to make them fit into the whole by feeling alone—a blind, inarticulate method of procedure.

It is, as we all know, a difficult thing for human beings to begin a long and arduous task and to finish with the original objective still in mind. This inherent weakness or limitation is clearly demonstrated in the evolution of man's conceptions. A religion may start preaching humility, love and tolerance, to change insensibly in the course of two thousand years to such an extent that its original objectives have been transvalued and turned completely face about, or a political system may set out to produce equality among people only to culminate in a cleverly disguised caste system and as a reeking hotbed of racial antagonism. It is unnecessary to enlarge this parenthesis, since our intention here is merely to show that man's inability to adhere for any length of time to his stated objectives creates one of the greatest difficulties in the craft of painting. Most of us know a great deal about the origins and ends of past human experiments; we know the bases from which they started; why so many of them stand as incomplete lessons. From this we gather that in every case they had deviated from the original basis —they had been started but not completed. The causes of the waves of decadence and renaissance in the historical development of the art of depiction are on the other hand so well hidden under a mass of poetical and sentimental verbiage that they are difficult to trace. Consequently the mental confusion around them is the reason for this unnecessary state of ebb and flow. The truth of this given reason is only too clearly manifested in the illustrations contained in Appendix, Lectures, page 213, where we can clearly see some painters drifting away from the intentions of primeval man only to develop a form of art later on called "decadent."

The great and significant artists were those who returned to the original objective to provide links in the development of the scheme of appearances. Such men possessed highly disciplined minds—the ability to remember the point of departure is the mark of a disciplined mind. These men were loyal servants of the laws which govern human appearances and not the exponents of personal

fancies. More important, as it concerns us at present, their works illustrate an increasing knowledge of the causes of that sense of unity which is ever present in the schemes of natural light phenomena and which can only be depicted through the mental control of the factors involved.

In passing and since at this point we are examining paintings, it is opportune to add a few words to the remarks already made in previous definitions of the words "tonal extension." Appearances, as already demonstrated in Chapter II, Relativity, are deceptive; theories are dangerous except when they find their proper applications. *The extension of the tonal gamut in any natural proposition or picture is determined between the extremes of darkness and lightness, however small the place occupied by them on the superficial area of the scheme under analysis.* For example, in a concentrated light a black bottle against a very dark background might show the highlight on the bottle filling, say, one per cent., or even less, of the total area of the canvas, while the darkest part of the bottle and surroundings might occupy ninety-seven per cent of this area.

Nevertheless, however small the area occupied, the highlight marks the highest extension in the proposition. Note that in this example the full tonal extension is found on one object—the bottle. This, as the reader will readily understand, is not always the case. Under similar conditions the same bottle contrasted with a light background might claim ten per cent. of the canvas and in this case we might easily be misled into the idea that the proposition had a more extensive gamut because of the dramatic clash of the dark bottle against the light background. As a matter of fact the tonal gamut would be identical in the two cases because their tonal extensions were equally great.

We have already said that the *dominant tone is the largest area occupied by any one tone in a picture.* To this we may add that the student will find that it will be helpful to discover and speak to himself about the dominant tone discernible in his proposition for the good reason that the degree of a tone is more easily determined on larger than smaller areas. This important tone more often than not is found in the middle register (8 on diagram 51, page 137). (A purely technical reason why this dominant characteristic should receive careful attention early in the work is that it will obviate the necessity of raising or lowering a tone occupying a large surface—technically a more tedious job than the changing of a pigment on a smaller one).

It is well to restate here that the *conscious* control of keynote is the latest development in the art. The conscious control of tonal relata is also of comparatively recent date, preceding however the control of keynote. Plate 3, page 235 shows the control of forms, some of them conventional in the sense that they were tangible more than visual truths, without revealing any control of tonal relationships. Of course, D'Arezzo was forced to make parts of his canvas lighter and darker in order to reveal his forms, but these degrees of chiaroscuro came about by a process of trial and error and were not consciously defined in their extensions. Later on painters sensing the limitations of the older and simpler methods endeavoured in an instinctive and inarticulate way to push further ahead. Thus we see that in many of Corot's pictures he has tried to put a quantity of detail into his skies only to discover that these details (which necessitated the introduction of slightly darker tones) let down the exact generalization of the tonal value of the sky. The effect of this meant a diminution of the complete tonal extension which affected the whole picture for the worse. Being a true artist, Corot sensed this loss and lightened up his skies even if it meant the suppression of much of the detail laid down. There are evidences on his pictures of having drifted upwards and downwards, sensing without being definitely conscious of the reasons for the losses and gains. He finally compromised between the two—the gain in topographical detail or the gain of the sense of limpidity and lightness generally found in skies. The point at issue here is firstly that he was an artist primarily interested in visual sensation and the compromise that he made between these and his ideas on things (clouds, open sky, etc.) was not the result of a mentally controlled formula. However that may be, his experiments mark a progress towards the definite knowledge of a controlled basis of tonal relata for we feel from his paintings a general sense of airiness and space more clearly revealed than in the painters who preceded him.

These remarks on Corot's instinctive search for the most advantageous keynote of his tonal relata although based on experience might be subject to criticism. In the demonstrations of "My Lady's Table," plates 71 to 83, pages 168 to 174, criticism can find no place, for in each formula the objective was specified before being painted and *in each case it proved itself.* As a painting it can be considered as one in which trial and error methods, either mental or pigmental, took no part—a picture in the making of which no mistakes were made. Starting from the blank canvas it was stated from the focussing point that the problem would require practically the whole extension of

the painter's keyboard, say 3 to 16 on diagram 51, page 137. Technically this meant that some part or parts of the picture had to be filled with pure white, others with almost pure black. (This meant that in this particular case the question of keynote did not require any consideration; that all that was necessary here was to see from beginning to end that this extension should at least never be diminished). In contrast to this tonal range, in "Olinda Falls Road," plate 27, page 56, the extension was defined as a lesser one, 7 to 16. As a consequence, while the keynote could not be moved higher the whole set or scheme of tonal relata could be shifted several degrees down, say, 1 to 9.

Reverting to "My Lady's Table," the next concern was the choice of the dominant tone. It was diagnozed as a generalization of the tones on all the parts of the canvas representing the major part of the background and repeating itself on smaller areas on the bodice of the little statuette and parts of the big jar. In "Olinda Falls Road" the tone of the distant mountain and all the other parts of the picture having the same tonal value (though not necessarily the same colour) was accepted for the same reason.

The dominant tone is more or less easily determined in different visual problems. In "My Lady's Table" it was easily found, but in plate 38, page 86, "St. John's Parade," it was more difficult. The reason as will be seen by reference to diagram 39, page 87, is that the generalized dominant tone is nearly equal in size with other generalized tones in the formula, while in "My Lady's Table" this dominant factor is easily noted as occupying a larger area than any other.

Summing up these considerations on the use of the word keynote in the sphere of appearances, it should be clearly understood that colour and form play no part in its establishment—*tonal relata alone concern this factor.*

CHAPTER IV.

The Evolution of Appearances

WE COME NOW TO THE VISUAL DEMONSTRATIONS OF MANY OF THE abstract statements in the preceding chapters, from which we may realize more definitely the order of cerebral awareness as defined and laid down in the interpretation of *three-dimensional* subject-matter.

Each plate in the series 57 to 64, page 152 to 155, shows two frames, A and B, numbered and lettered to permit of easy reference. In the frame A from a *fixed focussing point* the actual objects or things to be defined in their characteristics of pure objective visual phenomena are seen. They constitute the fixed subject of analysis and remain unchanged throughout the series A. In the definition and postulation of visual data in the series B and in order that they should represent exactly the same cut-off seen in the actual things through the frame A and to ensure that the comparison between them would be exact in every respect, a technical difficulty had to be overcome which necessitated doing the work with one eye closed. The reason for this unorthodox procedure was imposed by one of the many differences between the monocular field of vision of the camera and the binocular field of human beings. The cause of this necessity is illustrated approximately in diagram 56, page 145. Thus: Let FF represent a wall, DE an aperture (such as the frame round the actual objects as in plates 57 A to 64 A, pages 152 to 155), A the single eye of the camera and BC the two eyes of a human being. The extent of the wall FF visible in the first case is shown from A to A and in the second from C to B. This dissimilarity between the mechanical and human fields of vision is only one of the many existing between photographic and human visual records. Any others do not concern the present objective. Before leaving this diagram 56 let it be understood that it does not in any way attempt to fix the difference between the range of human vision and that of the camera. As we have already stated the term *human field of vision* simply implies in this context the area surrounding a point in which visual phenomena can be described in terms of things (Column III, page 37). Actually with human binocular vision, light and dark disturbances are recognizable within a radius of 180 degrees, but

in the larger part of this area, while these disturbances can be sensed the objects which they represent cannot be named. With this proviso although the human field of vision is larger than that of the camera, the camera takes in a larger area in which objects can be named and described (Column III, page 37). So much does this ambit of nameable objects vary from the human field of vision that it may be stated that the average photographic result divided into eight parts would represent approximately that number of separate human pictures. This noted and also remembering that the cut-off A was seen with one eye, it is clear that had it been observed with the two eyes a larger amount of wall and other objects behind the statuette would have been seen at the edges of the frame A. The picture on the right of the statuette would have appeared further away from the edge of the frame and the curtains on the left would have shown a similar disparity.

. . . . .

The theory that sensations of depth depend entirely on binocular vision can be disproved easily here. The falsity of this idea being shown clearly in plate 64 B, page 155, wherein the sense of space is as definitely felt as though the objects had been seen stereoscopically.

Before beginning the description of the methods employed in the paintings 57 B to 64 B it must be fully appreciated that all these developments were studied and classified by *speed of definition* where in the analysis of the set of patches (plates 31 to 36, pages 69 to 74) the reader will recall that distance was employed. Speed of definition being the method of analysis in this instance it was imperative that a fixed focussing point had to be chosen and maintained. We have already discussed the reasons necessitating this course when studying three-dimensional subject-matter.

Painting is a comparative art. We can only paint as far as we discern differences between canvas and subject. Our first observation in this case described plate 57 B, page 152, as a bare untroubled surface of a light tone more or less equivalent to the light tones on the statuette and certain other objects in 57 A. Following this a generalization was made of the placings, sizes and shapes of the major light and dark disturbances. The major light disturbance was noted extending from the middle of area 4C down through 3C and slightly lower than 2C. Next to this, another disturbance was located in 1 and 2 A, B. Minor light disturbances were specified in areas 2 and 3D with a smaller one somewhere near the centre. These simple, objective statements, the only made, are revealed in plate 58 B. Technically, the formula employed in painting 58 B

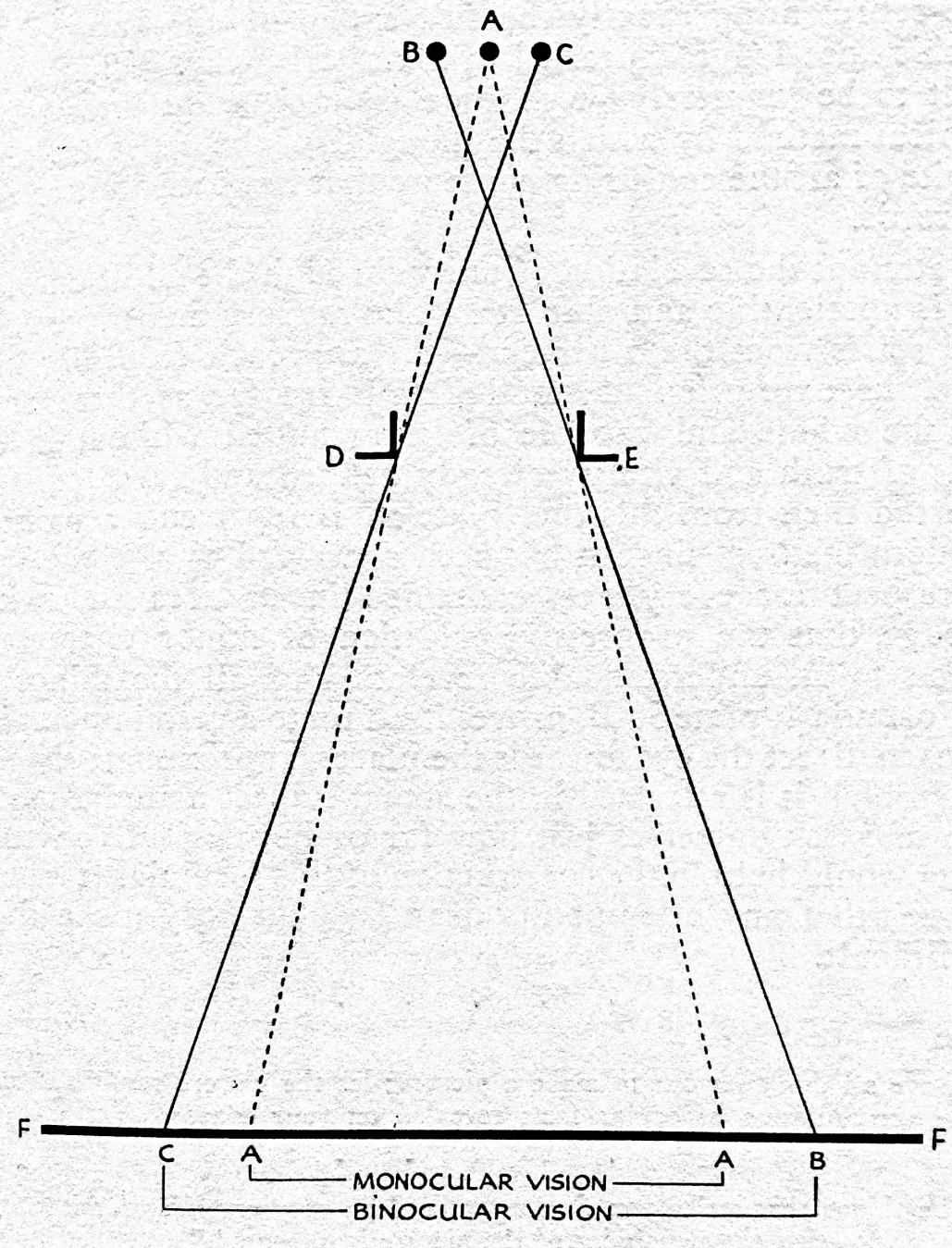


DIAGRAM 56.

was equally simple. As we have said, the blank canvas presented an entire surface tonally more or less equivalent to the lightest parts of the subject.

That being the case, it was obvious that the quickest and most practical revealing agent was a darker paint applied to the board in such a way that the placements of the light disturbances were transformed from abstractions into visual realities. Formula 1, plate 58 B, page 152, shows paint used in such a way that it gives us a

picture representing exactly the full extent of our knowledge and more, this knowledge expressed in a masterly way. What is known and felt to be "masterly" technique is just the quickest and most economical method by which the thoughts of the artist are revealed —in spite of all the confusing nonsense that has been written around these words.

To attempt the revelation of unity through the addition of small details is unscientific and obsolete. The modern and more effective method starts from the other end—the approach from big impressions to the expression of small details insofar as these are seen within the whole and capable of being added without involving any loss of truth and vitality already defined and revealed. It can be inferred then from this that plate 58 B represents a painting in the modern method, since it has been conceived as a whole with an equal respect for every part contained in its area and with the knowledge that the progressive addition of minor characteristics will lead to an understandable revelation of all the things it depicts. Formula 1, plate 58 B, proves itself up to a certain point in that it begins to direct the eye towards the places, approximate shapes and sizes to which it is attracted in the actual subject-matter A. In passing we may ask ourselves just how far or how useful conventional drawing would help in the construction of this formula. It is obvious, of course, that any attempt to "draw" would only make the task more difficult.

. . . . .

Lesson Notes:

"Above all don't set out to make a picture; let the picture result automatically from the accumulation of ocular facts revealed on your canvas."

. . . . .

"The things that strike you first must be done very carefully for it is by these first impressions that the remainder of the picture is measured."

. . . . .

"A painting which has escaped the control of the painter has no lesson to teach. Most of paintings lack control and because of this they cannot be classed as works of art; they produce in the mind of the observer the same state of mental confusion in which the painter did his work. True works of art produce feelings of exhilaration transmitted through the artist's state of mental clarity. Shove your work back to what you can definitely vouch for."

. . . . .

In formula 2, plate 59 B, the same method of procedure followed. Characteristics of "woolliness" or confusion were noted around many parts of the major light disturbances; it was seen that the generaliza-

tion of the dark tones was not dark enough. A few equally simple observations were made about the relative lengths, inclinations and placings of the most easily seen forms and a darker paint was applied to reveal this more advanced stage. The result of these definitions operates in formula 2, page 153. Partially close the eyes or use the diffusing screen and the effectiveness and truth of these observations is proved spontaneously. The problem is resolving itself and interchangeability is coming surely and swiftly. Here let us reflect that on similar subject-matter and in the time employed, (25 minutes) the canvas of the XIVth. century painter would have presented the appearance of a few paint and pencil marks having little or nothing to do as yet with the subject as a whole.

. . . . . .

Lesson Notes:

"Don't start to split your painting up into small parts. Try to see it always from the outside edges and before you have had time to pick up small details. If you don't do this the sense of unity and dignity ever present in nature will disappear and your work will become small and niggling."

. . . . . .

"Stop relying on all these details. You've started at the wrong end. You can see that in spite of all this fatally easy notation of minor characteristics that your work fails to give a satisfying feeling of unity. It is so easy to be complicated and so difficult to be simple and when your painting attracts the eye to a badly co-ordinated set of details as this one does you may know that you have not been working hard enough. This human weakness of over-complication, this desire to escape from the consideration of fundamentals has led to the failure of many of man's social, religious and scientific experiments. Simplify back to earlier impressions and put more work into them."

. . . . . .

"Stand at your focussing point and think of your subject and painting as two pictures. Hold your eye between the two and note how far you get the same sensations from them. This will help you to steer clear of insignificant and untimely details."

. . . . . .

"Exhaust the possibilities of every formula before proceeding further. Make your formula do as much as it can within its scope. In this way you leave the door open for the next step forward just as a good billiard player leaves the balls in position for his next shot."

. . . . . .

Formula 2, plate 59 B, having been compared and found to be an advance of 1 B the new job imposed itself. Formula 3 B was arrived at by the same method—differences were discussed and tested until the most obvious remained. Several differences chosen in this orderly way have been added in plate 60 B. The major light dis-

turbance in plate 59 B has been moved towards the left, a form has been emphasized by tonal extension creating a horizontal light disturbance in 3D, and continuing vertically through 3D, 2D, to 1D; a horizontal light disturbance has been run through 1A, 1B, 1C and 1D and other light disturbances, representing leaves, have been added in 2A and 1A. These then are the most obvious differences which made formula 3 distinct from formula 2. Other smaller differences have been noted and the reader is left to discern these for himself as an exercise.

An important point to note here is that although in all these stages the greatest difference has been searched for, it has not necessarily always been found. Notwithstanding this, the objective remained constant, and the proportion of second degree differences dealt with mistakenly did not completely close the door to steady progress.

. . . . .

Lesson Note:

"After you have checked the visual demonstration of the success of your last formula, forget all that you have done and try to see your picture as though you had never seen it before. If you can say to yourself, 'Someone else did this, I didn't', you may surprise the picture into an avowal of its cardinal weakness, since it is always easier to see the faults in other people's work than in your own."

. . . . .

In any depictive experiment visual phenomena analysed and laid down in this objective manner ultimately reveals perceptions of things (Column III). Unfortunately in this development a formidable difficulty lies in wait for the tyro. Only too often students and artists are heard complaining that the wonderful and convincing start they had made had for some mysterious reason suddenly become graphically incoherent. The reason for this collapse is easily explained. When a painter starts a picture he has in front of him his subject-matter and a flat canvas and it is clear that he can only start work by making patches of lights and darks (objective data). In reasoning in this way he is, by the very nature of the circumstances, thinking as a painter. His first brushmarks, as a consequence, inevitably bring about more resemblance between his canvas and subject. He is elated. Things are going well and he proceeds to define and lay down further data. Now comes the difficulty. The valid facts on appearances which as we have said he is constrained to deal with, accumulate until they reach a stage where they provoke the realization of objects and things. From this point he is unwittingly pulled into the realm of subjective perceptivity, and passes

from his true sphere of interest (column II, page 36) to the consideration of subjective perceptions (Column III). In a few moments his work, which up till then had given back convincing sensations of at least a few of the elementary facts of visual phenomena, begins to dwindle, fade away, until he becomes discouraged and wild enough to put his foot through his canvas without being aware of the real cause of his difficulty. Say, for example, he is painting a portrait. Of necessity he has begun his work objectively and carried it to where it automatically speaks about objects and things. When this happens he ceases, unconsciously, to be a craftsman, becomes an ordinary observer and may say to himself while in this condition of *subjective perceptivity,* "This nose is too long," having forgotten that the perception of a nose as revealed from a flat surface is a controlled group of related tones and shapes, with which, as a craftsman he should be solely concerned (Cf. diagram 37 A, B, page 79, Hand Series, as an example of objective statements allowed to convey the idea of a hand). By permitting his attention to stray in this way into the world of physical abstractions much of his energy has been diverted fruitlessly and he sees his work developing into a hybrid collection of inaccurate statements on visual phenomena confused by symbols vicariously representing ideas on things. His work in this sterile condition will confuse and depress him and it will take an act of courage on his part to bring it back to a convincing state of depictive clarity. If, however, he can say to himself "noses be hanged", recognize and eliminate from his work all the symbols it contains he will soon bring it back to an encouraging state of depictive fecundity.

. . . . .

Lesson Note:

"You tell me that your forehead looks too broad and you will continue to find it difficult to cure this fault insofar as you describe it in words that anyone could use. This thing which you call a forehead is for you a disposition of a few controlled tones disposed in certain places on the surface of your canvas. Start using the words which concern your job—in this case dispositions of form and placement. Find out appropriate terms to speak to yourself and to others about pure objective factors, gather fresh data about them, lay them down and the sense of a forehead of the right shape will come automatically."

. . . . .

All roads lead to Rome and all avenues which might lead to the province in which the painter lives and acts are worth exploring. One of these indirect roads could be called *the tangible approach.* This simply means that we may start from the tangible edges of material objects and trace backwards to the visual sensations through

which these objects have been defined as such. This mode of procedure is only another of the many capable of serving the painter (in a crayfish fashion) in the actual work which concerns him. Consider plate 65; amongst other ideas which this illustration provokes is the conception contained in the word statuette. Tangibly, the actual edge of this object is seen visually well marked at various places at which tangible and visual truths exist together. At other parts the material edge is not seen but is inferred from its context. Between these two definitions we may note other parts of the statuette where the tangible edge appears to stray away from its actual position. The dotted line, 1, in diagram 66, page 156, represents the parts in which visible and tangible truths are found in partnership and 3 where (small differences having been excluded) the edge has been regarded as non-existent. (Partially close the eyes or use the diffusing screen to test this.)

Compare now this analysis as revealed in plate 65, page 151. Starting from partition 3 in the right bottom corner of the diagram the tangible edge of the pedestal has been defined as non-existent. The edge is seen clearly in the small partition above it as a contrast of dark against light. In partition 3, above this small evidence of the tangible edge of the pedestal, tonal separation between the statuette and the picture beside it has been diagnozed as non-existent. Proceeding in the same way partition 1 reveals the edge in two small places. Following this, partition 3 reveals no tangible edge. Partition 1 above it and following round the top of the statuette down to the waist line reveals the tangible edge clearly marked by tonal differences. Partition 2 shows a part of the statuette where the edge becomes more confused. Number 1 reveals the edge again clearly marked, below it number 3 marks a part where a tone on the left side of the pedestal runs into the dark blue of the vase. Again we have the edge well marked on the left side of the pedestal and to conclude this journey number 2 shows the actual base of the statuette, although still visible, to a lesser degree. Armed with this particular form of knowledge, traced back in this case from the world of things known to exist tangibly, the visual revelation of the three statements made becomes easy. In an approximate way the procedure is to make a strong contrast or tonal extension on all the forms marked 1. In those marked 3 care must be taken to ensure that whatever changes of colour require to be stated, no tonal change must be allowed to happen at the contact of the tangible edge of the statuette. Failing this a form would appear where none had been stated. In the parts marked 2 (inter-

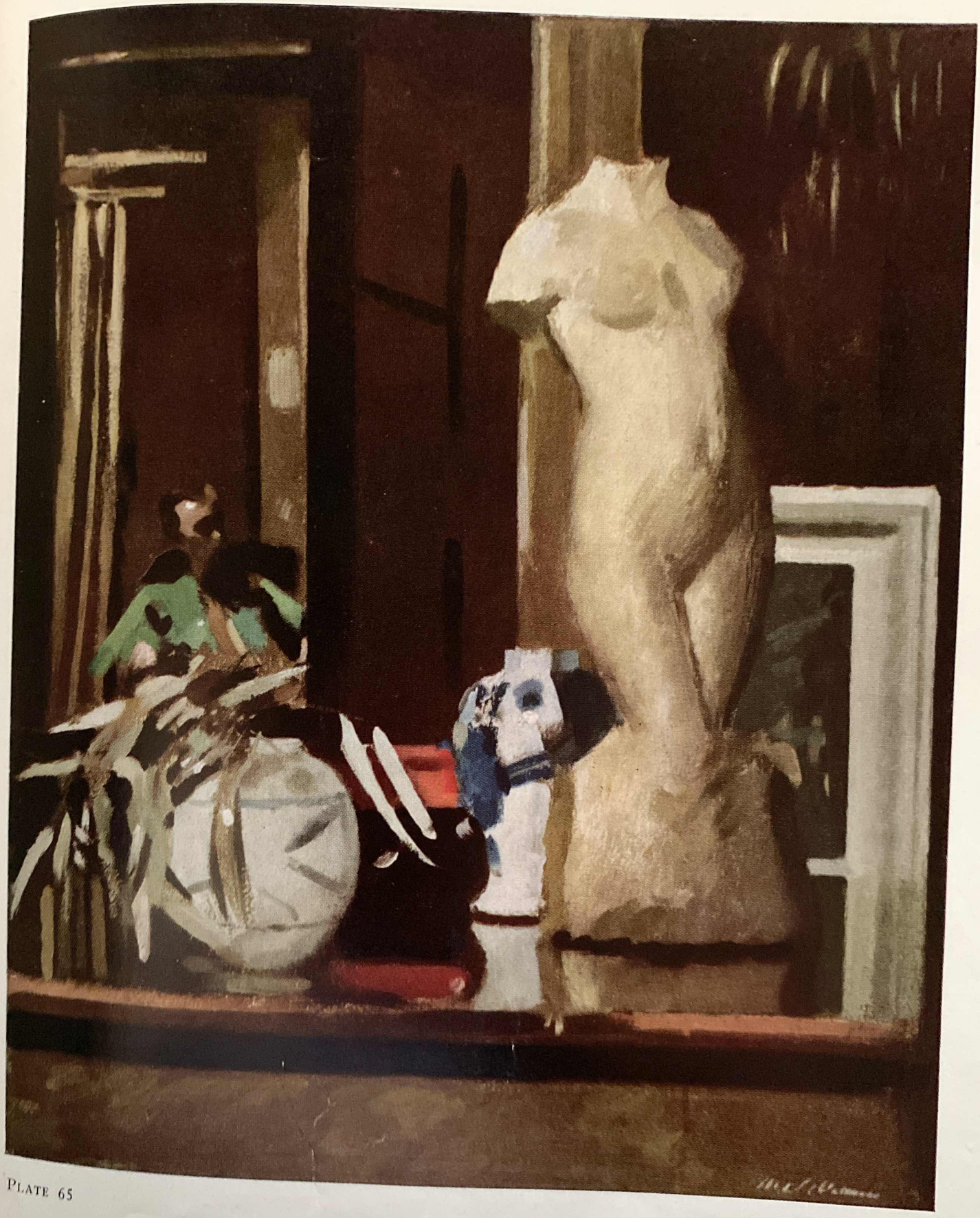
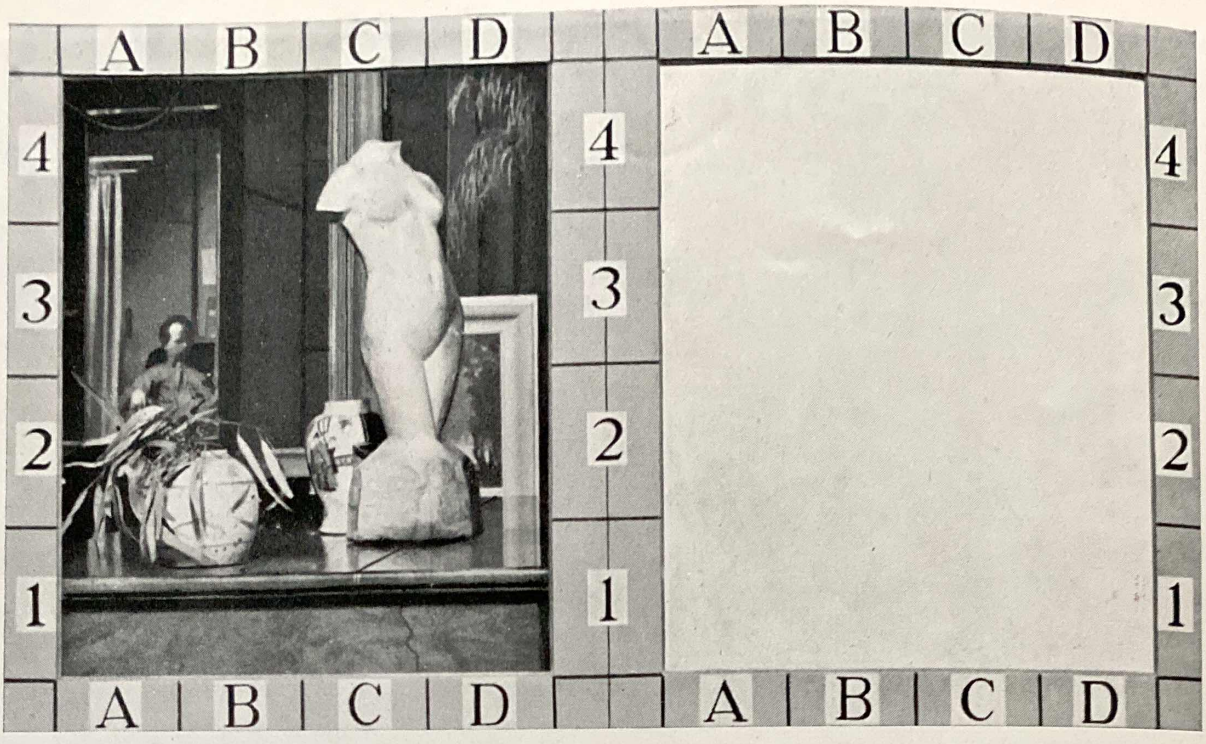


PLATE 65

STILL-LIFE
(Painted 1947)

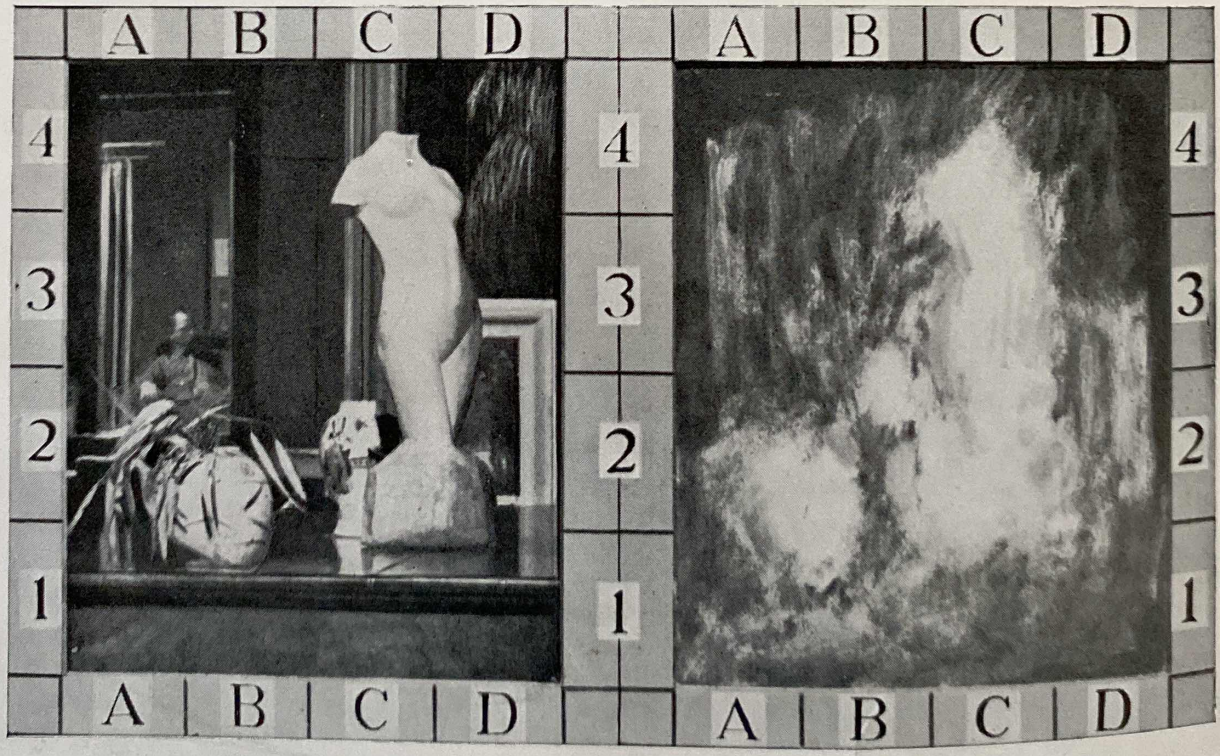
MAX MELDRUM



A
ACTUAL OBJECTS

B
BLANK CANVAS

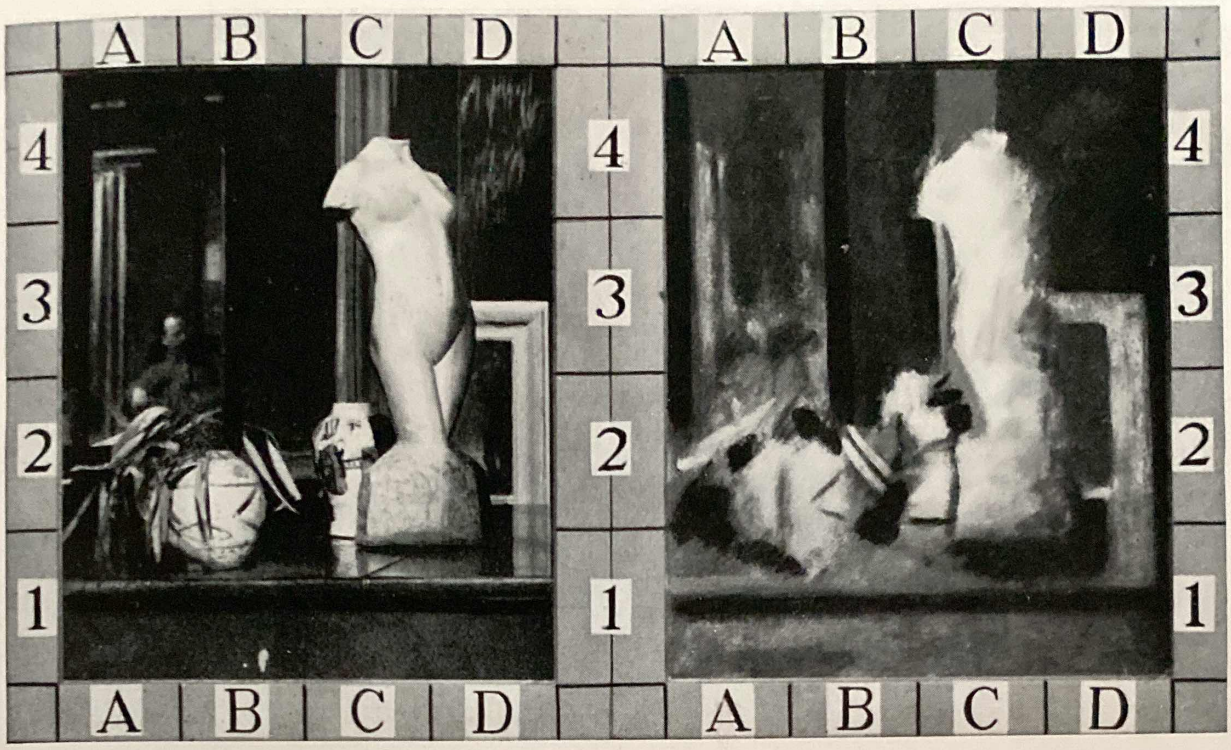
PLATE 57



A

B
FORMULA 1

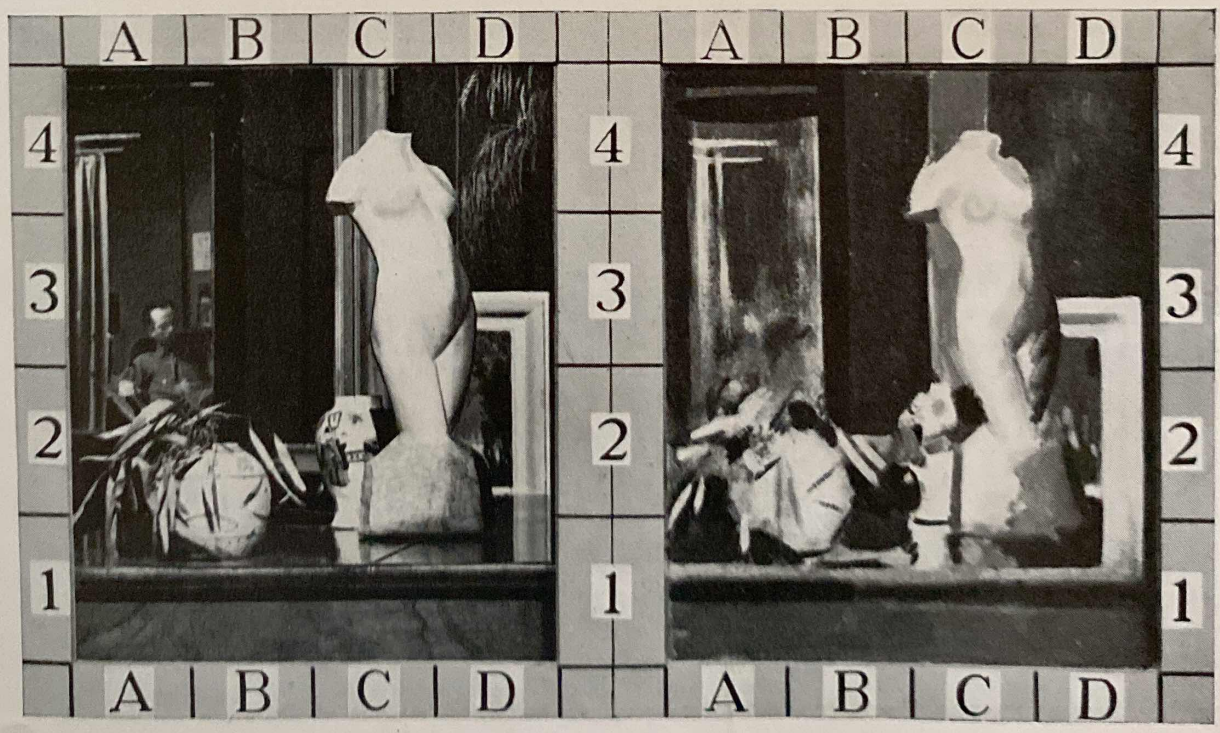
PLATE 58



A

B
FORMULA 2

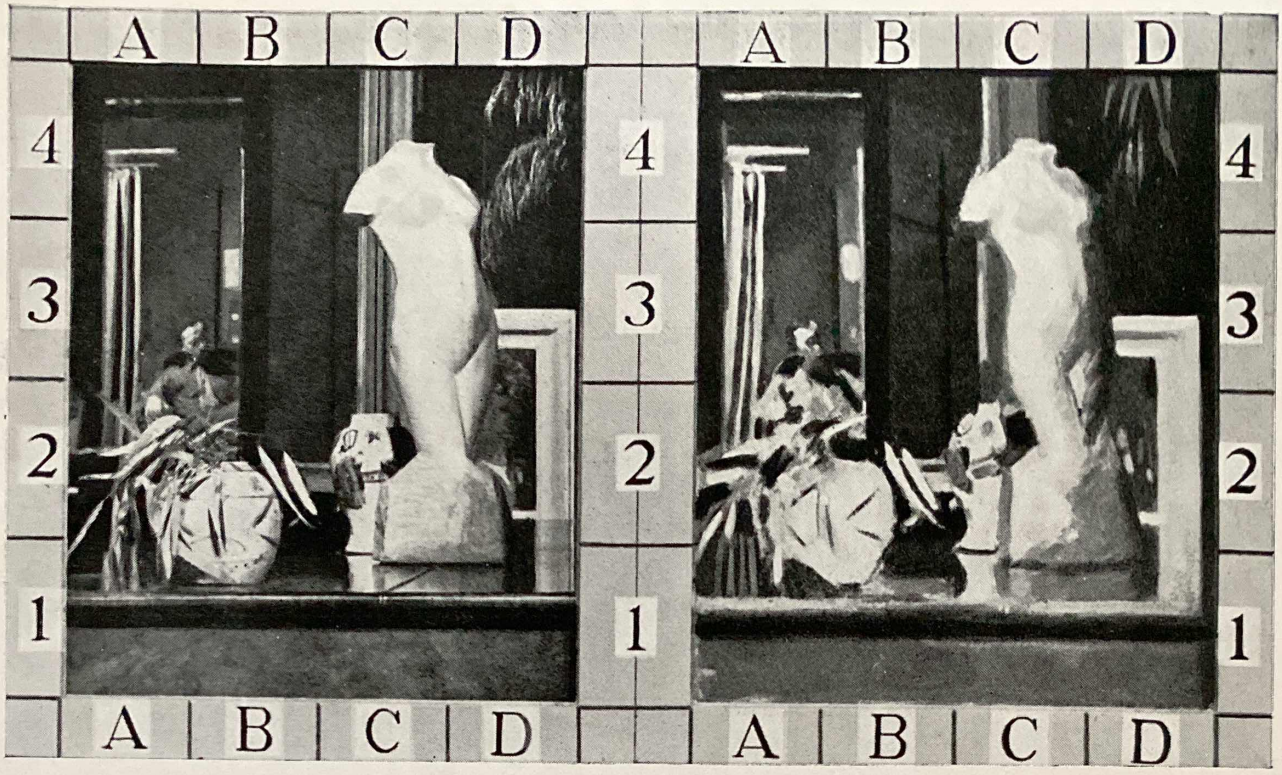
PLATE 59



A

B
FORMULA 3

PLATE 60

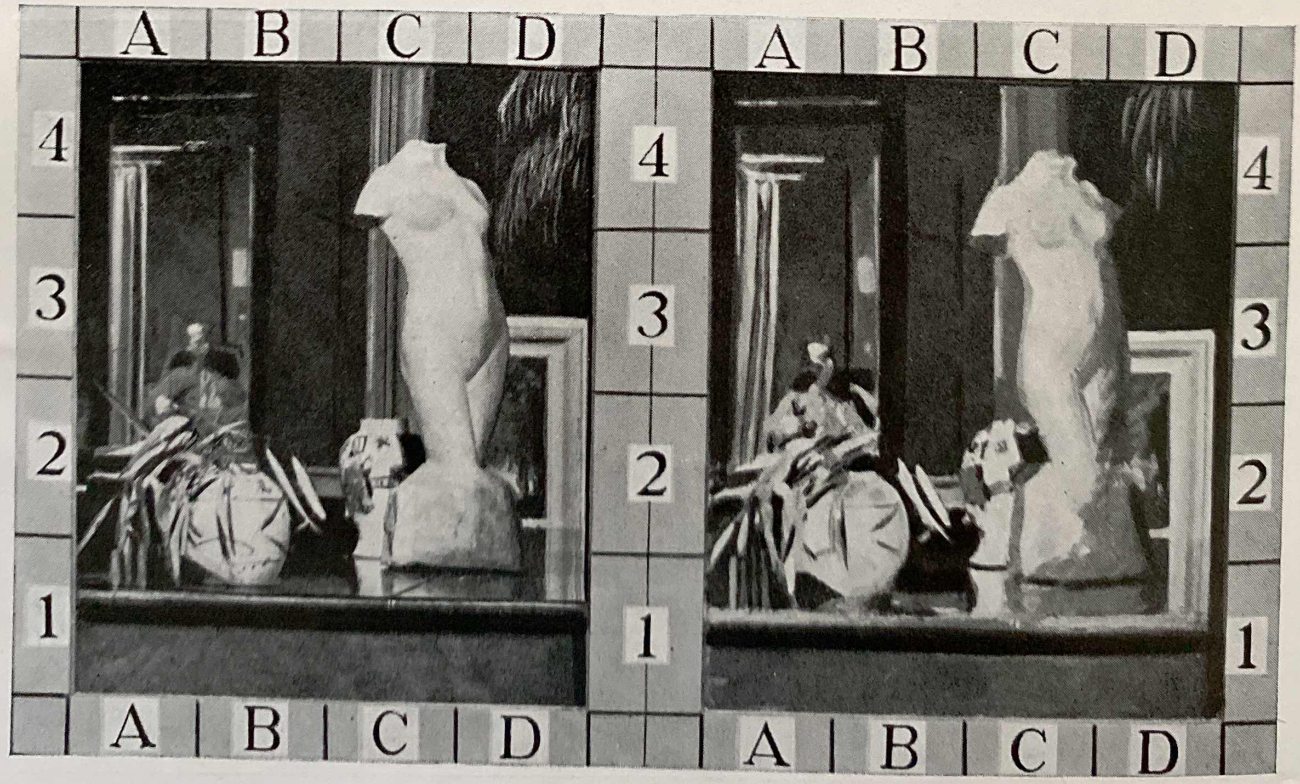


A

B

FORMULA 4

PLATE 61

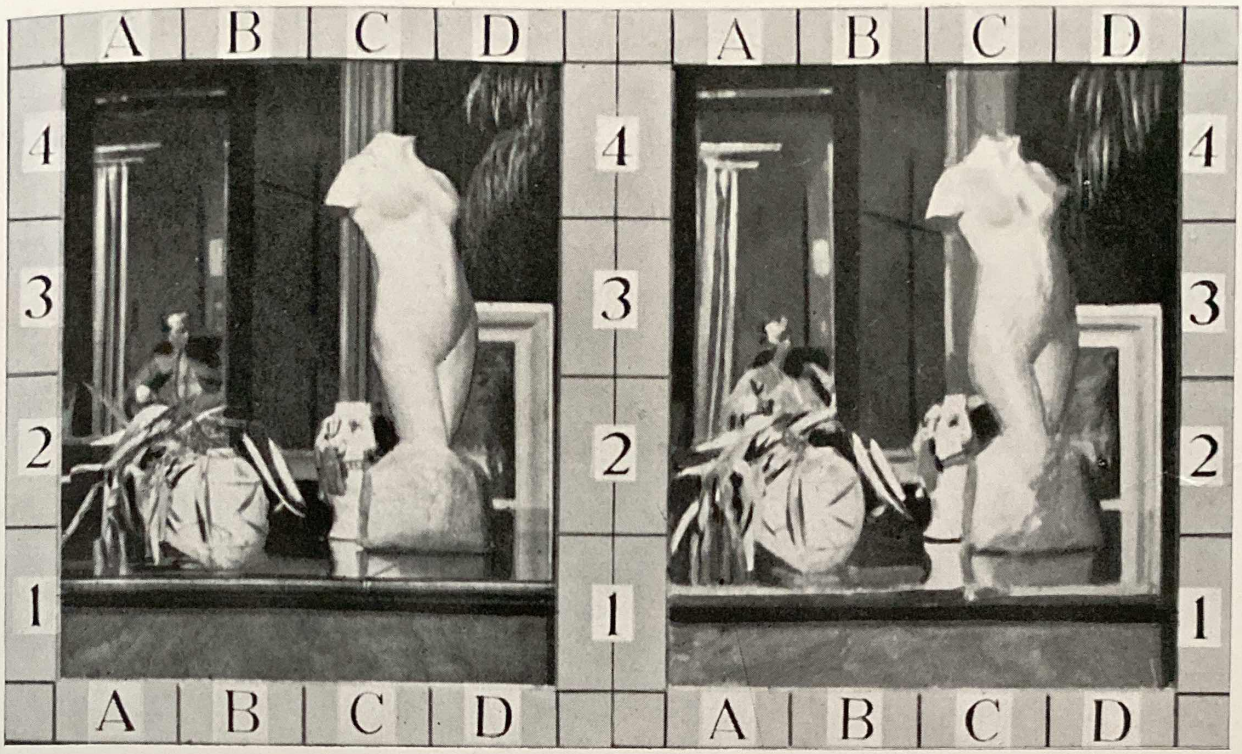


A

B

FORMULA 5

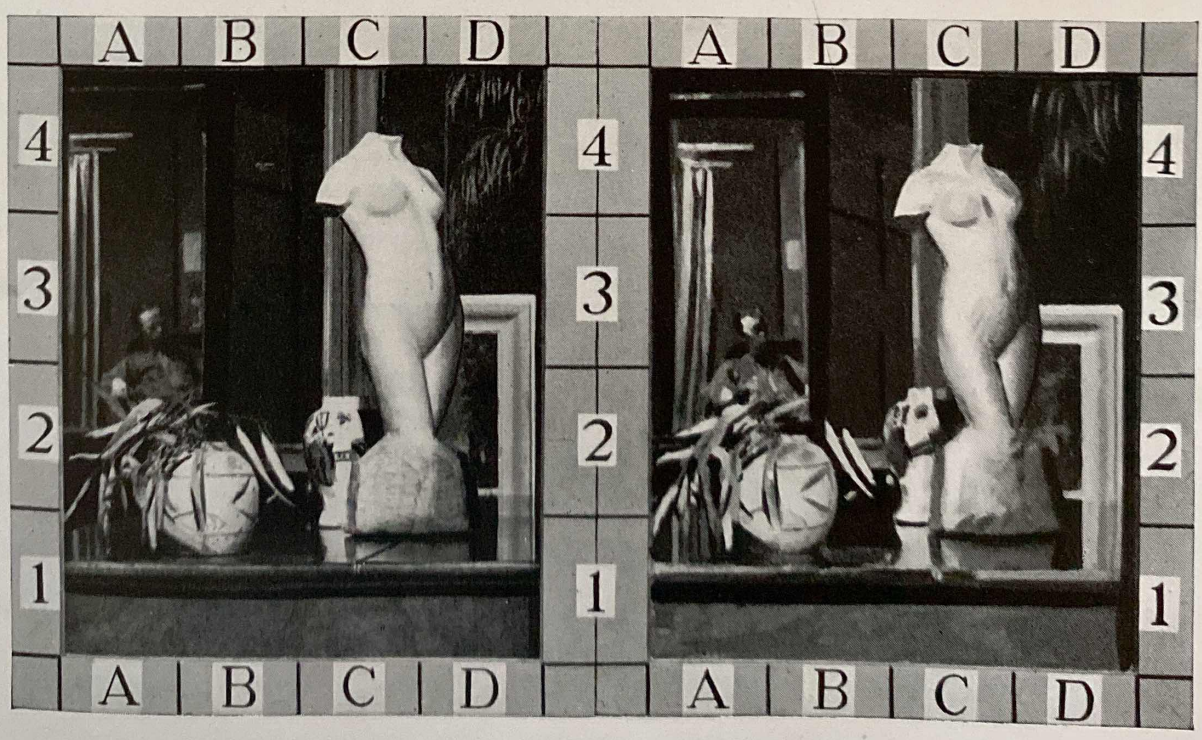
PLATE 62



A

B
FORMULA 6

PLATE 63



A

B
FORMULA 7

PLATE 64

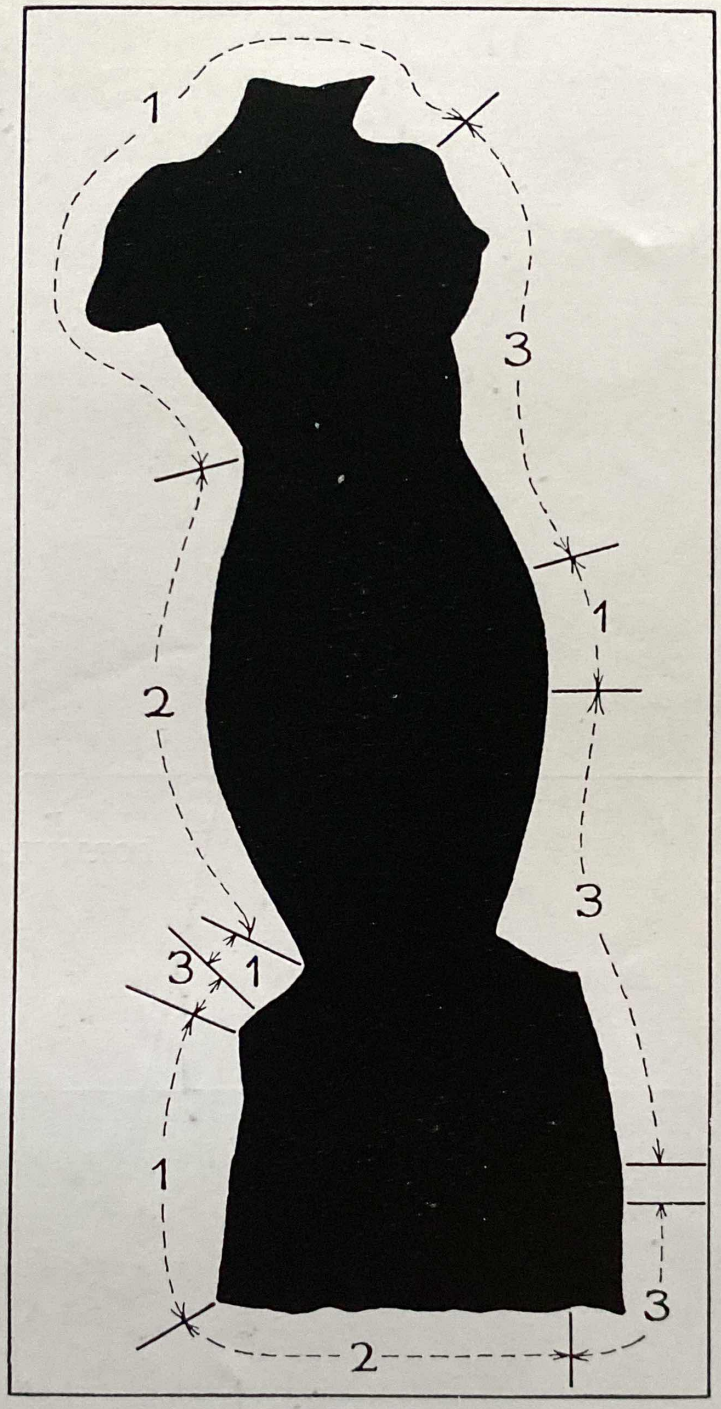


DIAGRAM 66

THE TANGIBLE APPROACH

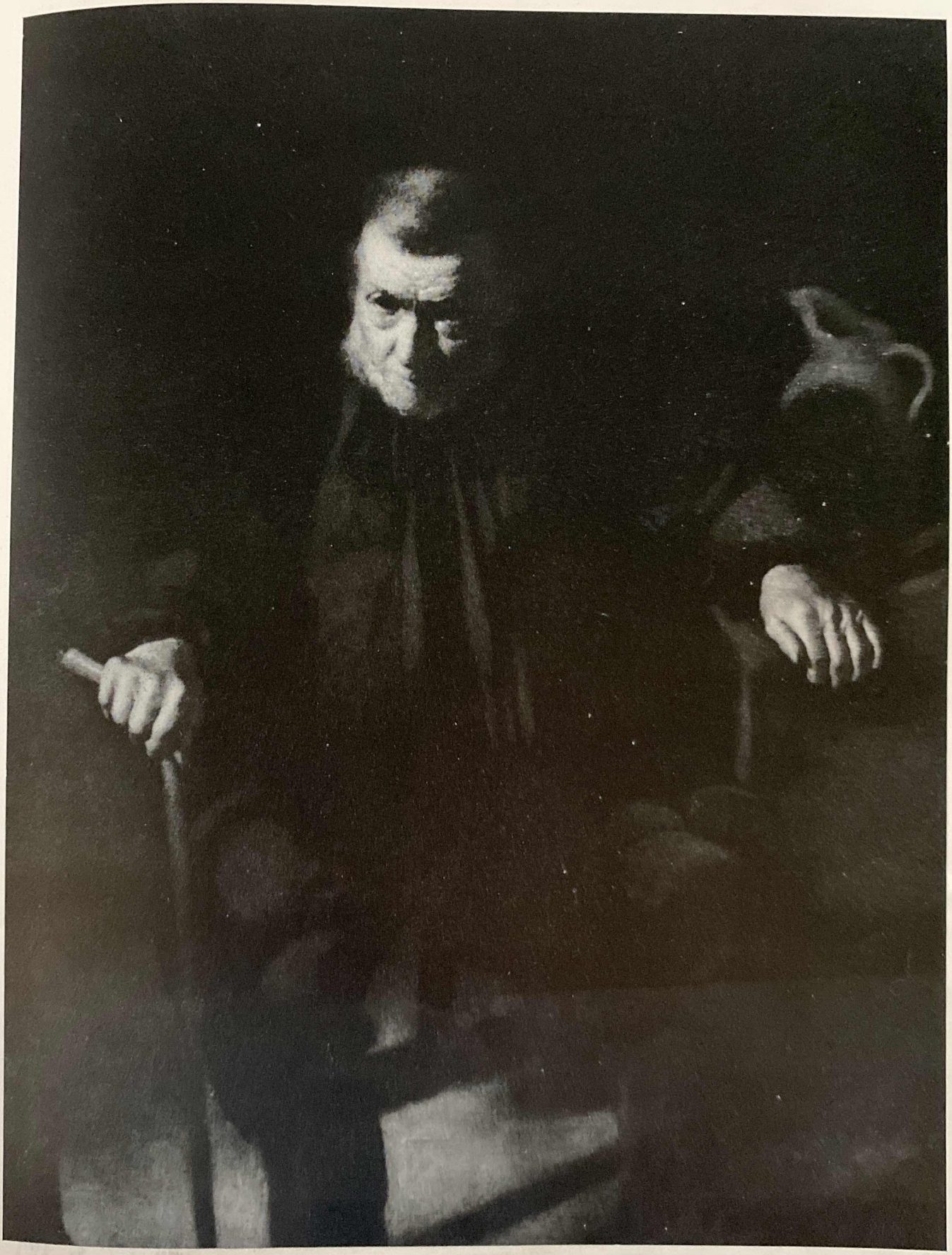


PLATE 23

"THE PEASANT OF PACÉ"
(Painted 1908)

MAX MELDRUM

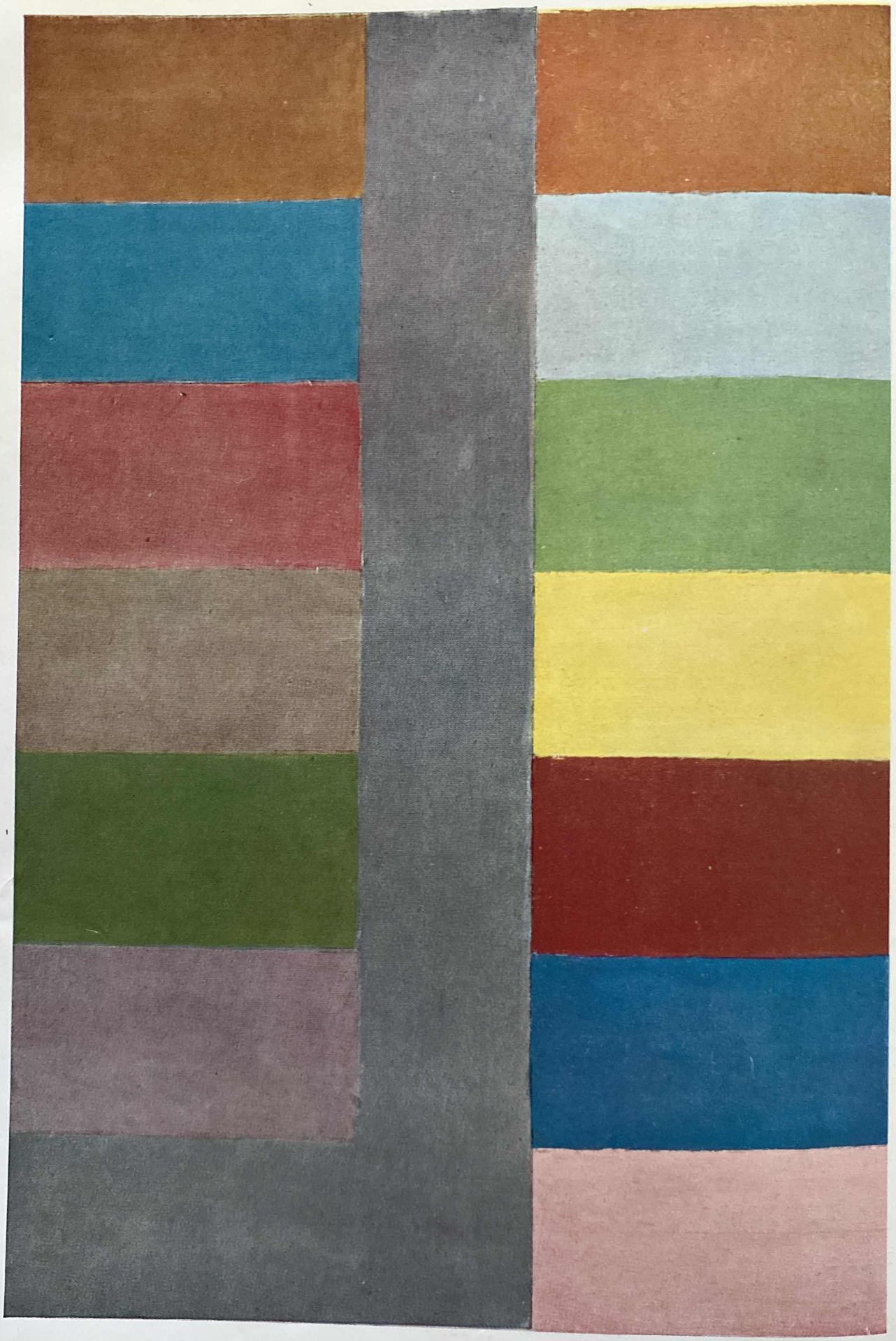


PLATE 67. COLOUR DIAGRAM

mediate between the extremes of 1 and 3) all that is necessary is to dispose of tonal relationships around the desired forms to create by contrast with the parts 1 and 3 the feeling of uncertainty, confusion, or softness seen in the subject.

In the world of knowledge the end always justifies the means. In the practice of the craft of painting, however cautiously this end may have been reached, the experienced craftsman is sooner or later able to discard all roundabout methods which may have been useful and *necessary* in his student days and put himself directly in that objective state of mind in which he is able to solve his problems directly from the *fons et origo* of his craft. This means the attainment of greater speeds of execution which fits him to deal legitimately with many kinds of subject-matter which would be outside of the scope of the student.

Reverting to our analysis of the series 57-64, pages 152 to 155, which has been carried to a certain point, the reader is asked to go through the rest of them as an exercise since the principle involved is already sufficiently demonstrated.

. . . . .

Lesson Notes:

"The principal asset in the acquirement of the craft of painting is mental ingenuity. All possible methods by which the correctness of your definitions can be demonstrated are worth trying. Here, for instance, is one. If you are painting a still-life fix up a frame in such a way that from your focussing point you can see the actual subject-matter and things contained therein as you wish them to appear in your painting. Since we know that the world of the painter is two-dimensional, it follows that any part of nature viewed through a frame, can by an effort of the imagination, suggest itself as a flat surface covered by patches of tones, forms and colours. Insofar as you can do this you will find it easier to speak to yourself about the three objective factors which it contains. Inversely it will also help you to try to imagine your picture as an actual piece of nature. If, then, you see anything in this piece of nature which appears instinctively unnatural you may then make up your mind that these are the parts in which your picture fails. To put this in other words —the parts of your picture which in some way or another contravene the laws of appearances."

. . . . .

"Train the eye and brain in your spare time. Here is one way. Cut a piece about the size of a postage stamp from the middle of a piece of cardboard and carry it about with you in your pocket. In spare moments hold it up about a foot away, close one eye and look through the hole. Try now to make an intellectual pastime of what you see through it. Define what appears to be the darkest and lightest parts of this picture; the keynote and extension in which they are pitched; intermediate tones and their relative position within the tonal gamut; areas occupied by given tones; characteristic and obvious forms and qualities of chromatic sensations. Imagine that you have to paint this picture. Consider the possibilities and limitations of your

material and tools and work out a practical formula to reveal this knowledge. Do this often. Compare your different formulas and you will begin to feel that though nature never presents the same combinations twice, yet still through the infinite variety of her manifestations she marks clearly the invincibility of the ocular laws of cause and effect. Here she presents a mathematical problem in which the dominant tone lies at the bottom of the pigmental keyboard, there it stands near the top; here, warm colours occupy fifteen per cent. of the area, there they monopolize ninety per cent; here the range of the eye is taxed to the utmost, there it is left with plenty of reserve; here the dominant forms are straight lines (towns, rooms) there they become rugged (trees, shrubs) and so on to infinity. Through all this harlequinade of forms and colours a feeling of unity nevertheless pervades—a feeling which makes us slowly aware that behind it all lies the simple static laws of cause and effect demanding study and understanding."

. . . . .

In the preceding chapters we have discussed and demonstrated visually the laws governing the important factors of tone and form and stated that the third factor, colour, was the least important and the most manageable, but in spite of this it has its own particular uses, which have been considered so far in a purely abstract way. It is time to discuss at more length some of its particular qualities and some of the laws governing chromatic consonances and dissonances. Within the range of coloured pigments this factor presents no difficulty from the moment the painter has mastered the tonal relationship upon which its true quality depends and this is as much as to say that practically the whole lesson of painting can be learned through monochrome studies. The student may be assured that every time he begins to experience a difficulty in the use of colour only one resource is left—to forget about it and to look to the adjustment of tonal values. Acting in this way he will find that in ratio with his added knowledge of tone the mystery of colour will dissipate itself.

. . . . .

Lesson Note:

"Your work, as I am sure you feel, has passed out of your control. You have put far more thought into trying to get the right colour and have left the other two factors straying behind. It is for this reason that I say, you have lost control. Pull the runaway back to the level of the two laggards over which you have a certain amount of control and start off again keeping the three factors, as far as you can, running side by side. If you do not pay attention to this your work will again get out of control, at whatever stage in its development it happens to be."

. . . . .

Colour only tells us that certain things are red, some blue and others green and so on, without telling us why we know things exist in reality as concrete objects. Tone and form are alone responsible

for such feelings. This understood, the question may be asked, at what stage should colour be considered? The answer is that *it becomes an all important factor in the evolution of appearances when chromatic sensations of dissimilarity become the outstanding differences between the painting and the subject.* Colour differences have not been mentioned in the analysis of the still-life, but they were made at any stage where they required immediate attention (Cf. plate 65). Without this, it would have been impossible to photograph the two side by side and at the same time make the two sides of each diagram tonally similar.

Notwithstanding what has been said concerning the relatively small intellectual interest provoked by colour, it has its own functions. For example, a full grown orange in a green state painted in monochrome would convey definitely the sensation of an orange in its visual qualities of roundness, solidity, texture and spatial position, but it would convey nothing about its condition of maturity or immaturity. Painted with a green colour, it would excite all the objective perceptions, as in the monochrome, to which would be added the subjective perception that it was not yet fit to eat.

Out-of-door effects, opposed to indoor, reveal a higher percentage of parts in which colour distinctions are absolute necessities in the description of things. The reason for this is that out-of-doors with the light flooding things from all angles many extensions of tone have become obliterated and replaced by colour distinctions and this is also the explanation of why we are more apt to comment on the beauty of colour out-of-doors than when in-doors. In studio lights, greater extensions of tone exist, creating forms with a higher speed value, interesting and compelling us to speak about them before anything else. There are, however, certain effects in landscape which have more of the tonal characteristics of indoor lighting in which we may note how far dramatic extensions of tone can by relationship obliterate differences of colour. Visualise for instance an effect at sunset where the extension of lightness and darkness between the relatively brilliant sky and the darkened land provides a form of such high speed value that all the colour differences which existed on the land when it received more light have dissolved and become generalized into one dark mass. These statements on the characteristic emotions derived from indoor and outdoor effects will be understood more precisely by reference to the colour diagram, plate 67, on page 158.

This diagram consists of a series of horizontal strips of colour

and tone, intersected by a vertical strip. To facilitate the description of this chart all forms created at any part of this vertical strip shall be described as vertical forms; those between the strips on either side of this vertical strip shall be termed horizontal forms. The vertical strip is the same from top to bottom. Since it has already been said that any pigment always contains two qualities, its tonal and chromatic degrees in relation to contiguous tones and colours, this means that the strip contains the same tonal and chromatic degrees throughout. In the original painting made for this plate all the colours on the left side of the central strip were accorded in the same tonal degree to show a set of seven colours possessing only chromatic differences. Unfortunately, for the present purpose no process of reproduction is capable of such exact control and slight tonal differences appear in the reproduction. However, such as it is, in contrast with the right side it will serve to show chromatic without tonal differences. Half close the eyes and observe the left side of the strip and we will find the beginning of a form appearing at the juncture of some of the seven horizontal strips with the vertical strip. Viewed under these conditions the green strip 5 appears accurately accorded with the vertical strip. The strips at the bottom and top of the green strip appear slightly lighter, since they begin the sensation of a form against the vertical strip. Above these the red strip appears slightly darker and the blue above it can be accepted as almost a perfect accord.

To make more clear the sense in which the word *form* as distinct from colour is used here, observe the horizontal form of 4 and 5 on the right hand side of the diagram. This form 4-5 is created by the apposition of two colours, 5 being the darkest and 4 the lightest in the whole diagram. In other words it is the form having the greatest speed value. The horizontal strips 5 and 6 we will accept as having the same tonal value, that is to say, a proposition in two colours and one tone and forming incidentally the darkest part of the diagram. It follows from this, and since the yellow strip 4 is the lightest, 7 against 5 and 6 makes a horizontal form 6-7 of slightly lesser speed than 4-5, and since the vertical strip has the same tonal value throughout, the vertical form 4 has a slightly higher speed value than the vertical form 7. The vertical forms 1 to 7 can be classed in this order: 5 and 6 together create a vertical form of low speed value, a contrast of relative darkness against a tone slightly lighter. The other vertical forms appear in this order: number 1 does not exist as a form, number 3 shows the beginning of a form, numbers 2 and 7 have about the same value and number 4 has

the most clearly defined form of them all. Horizontal forms go in this order: 4-5 has the highest speed value, followed by 6-7; 1-2, 3-4 and 2-3.

Having summarized a few of the facts contained in and the sensations provoked by, this colour diagram, let us relate what we have learnt to the visual phenomena of nature considered chromatically. By his very construction man is made to experience emotions agreeable or disagreeable. In this respect, since we are discussing colour, let us call these emotions harmonious or discordant. It is not within the power of man to be individual in this matter; to formulate schemes which are not those of nature and which are not therefore in accord with his ancestral development. A concord of colour, a rhythmic arrangement of shapes, a variety of forms of different speed values—all these provoked emotions long before we were born. What we feel as beauty of sound was felt by human beings long before Beethoven or Bach existed and harmonious arrangements of light phenomena were experienced by many before Velasquez and Constable. All that these men could do was to discover through patient work and thought the laws governing their particular media of expression; endeavour to understand them and get in rhythm with them reverently and humbly. The patient observation of natural phenomena and the knowledge of the evolution of ocular science makes it possible at last to define the cause of harmonious colour contrasts which, up to the present, has appeared an insoluble mystery.

Thus from the modern vantage point we may now lay it down as a law that **any two colours pitched in the same degree of tonality make a harmonious contrast.** We give as a reason for the pleasurable sensation excited by such appositions that they leave nothing for the brain to appreciate except differences of colour. (Note the harmony and dignity of the series of patches on the left hand side of the colour diagram pitched in approximately the same tonal keynote. Numbers 5 and 6 on the right hand side exhibit this harmony between themselves, pitched in a richer, i.e., a lower key. The other strips of colour produce uneasy, and in some places, disagreeable sensations.

Now, since we have said that colours pitched in the same tone must make a harmony, in what way can they become chromatically discordant? *Any two colours can become a discordant combination when they are pitched in a tonal extension in which the appeal or speed value of the form created balances in interest or speed value that of the chromatic differences.* In this condition any two colours

create a sensation of mental confusion more or less unconscious and a state of uncertainty, inducing in us a feeling of disturbance which makes the combination discordant. To illustrate: 4, 5, 6 and 7 on the left of plate 67, page 158, leave the mind quite clear and untroubled; there is nothing else to do here but to view the different colours quietly, but shift the eye to 4 and 5 on the right side to note by contrast the feeling of mental uneasiness emanating from this combination. *Juxtapositions of tone and colour such as these never occur in nature. A combination in which an obvious change of colour and an obvious form is created is not to be found in natural ocular phenomena.* We may see an obvious form with an obvious colour on one side but never on two sides for the form to be obvious has to be created by an extension of tone so great that the darker has dropped to a tonal degree in which colour is not appreciable or the lighter is pitched so high that it only appeals to us as brightness. The reversal of the law which we have just postulated may be summed up in this wise: **Any two pigments in which the appeal of the form created by tonal extension equals the interest created by colour differences is a contravention of natural light phenomena and, as such, must be disagreeable.** Such combinations do not exist except in man's ignorance of the laws governing appearances.

. . . . .

By this time sufficient has been said to show that the three factors in appearances can be considered and analysed as entities. Due to ignorance of this possibility, in the attempt to describe visual sensations words have been used vaguely or loosely. As an instance, we often hear it said of a group of flowers arranged in a pot, "they tone in well." This is a usage of words which only denotes a state of mental confusion, for they do not tell us whether the speaker was trying to describe a rhythmic, varied balance of shapes created by tones, as distinct from colours, or whether he was thinking about beautiful colours. We may also hear someone say, "what a beautiful shade of colour"—and again these words do not tell what the speaker had in mind—if, indeed, a definite thought existed. The word "shade" correctly used describes accurately sensations of lightness and darkness and if used in this pure sense would create no confusion. It would be more accurate here to say "a beautiful tint of colour." The misuse of such words, to name but two examples, can only be classed as a symptom of mental confusion and loose thinking. The science of appearances is an infant art and can only

progress side by side with the greater accuracy of the terms employed in its description. For this purpose new terms require to be coined and accepted, also those words in general use to-day must be accurately defined and universally understood. Some additions to this vocabulary have been made in this book, they are the result of much thought and for want of better ones, if such can be found, the student is asked to use them to discover for himself just how far they prove useful.

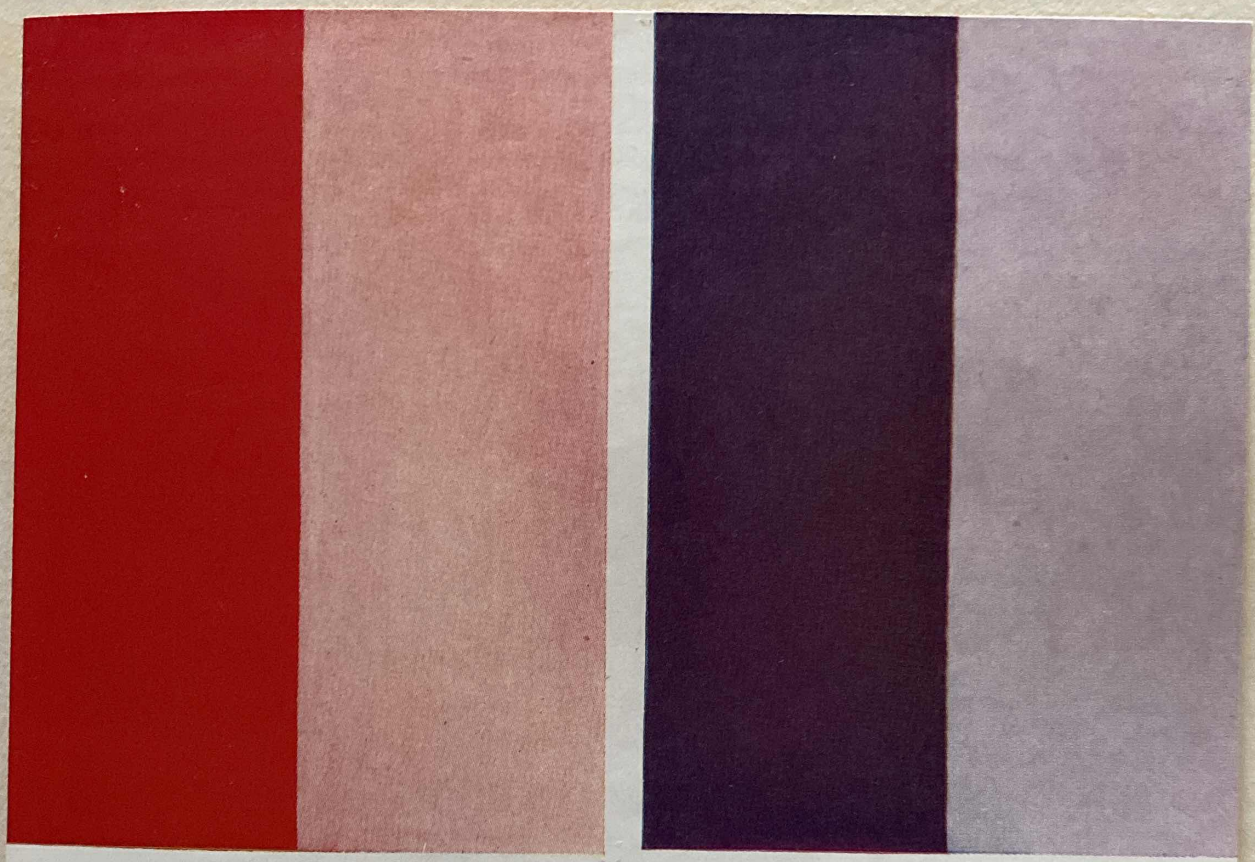


PLATE 68. PLATE 69.

TONAL VARIANTS OF IDENTICAL COLOURS.

Plates 68 and 69 show how ignorance of the particular roles played by the two factors, tone and colour, the inability to think of them separately, can lead to false concepts and the usage of inaccurate words in their description. For instance, it would be an inaccurate description of plate 68 to say that it represented two colours, a red and a pink. This is what most people would say about it, and such a definition of its nature would only serve to show how far the unwary can be tricked into thinking that

different tonal degrees of the same colour represent different colours. The real facts in this case are these: tonally the plate is split into two, a light tone and a dark tone having a certain definite extension. So much for tone. As for the colour by itself, nothing requires to be said, for it is a proposition in one colour, the lighter part being merely a tonal variant of the colour on the right. The correct analysis of this elementary problem examined in this specific way makes it a proposition of one colour and two tones.

Tonal variants of the same colour cannot make a chromatic discord, for all too obvious reasons. As a concrete application of this principle or law in interior decoration, a room could be decorated in tonal variants of the same colour and provided the tonal variants created a sense of dignity and simplicity it would make at least a room decorated in good taste. This means that any form of decoration relies for its sense of dignity and good taste on its tonal system and not on its colour transpositions within the system.

The quantity of colour transpositions within the system would only add the feeling of richness without affronting its dignity as a system. Tonal variants of one colour may be noted on a leaf, ranging from the parts in light to the parts in shadow and all natural light phenomena show this unity of colour on particular things. In order to amplify the meaning of the words "tonal variant" in this context, let us re-examine the strips on the right side of plate 67, page 158, to see how many variants it contains. Numbers 2 and 6 are tonal variants of the same colour; 5 and 7 likewise; 1, 3 and 4 have no variants. Considering the chart as a whole, 2 on the left hand side of the vertical strip is a tonal variant of 2 and 6 on the right, which makes for this particular colour three variants; finally 5 on the left is a variant of 3 on the right. Turn now to plate 69, page 165. Like plate 68, it is a proposition of two tones and one colour to which the average person would apply two terms, dark purple and lilac. This diagram further illustrates just how far changes of tonal degree tend to make us think of non-existent chromatic differences for which special names are required. To further confuse the issue in many cases more than one word has been coined to describe similar colour and tonal relationships. In this instance, heliotrope, mauve, cyclamen and puce have been used alternatively. In the bi-tonal arrangement of red in plate 68 the lighter strip is frequently known by the terms rose, salmon, pink, peach, etc. Countless examples exist in which differing tonal contrasts of colour have been responsible for a great number of unnecessary and confusing terms.

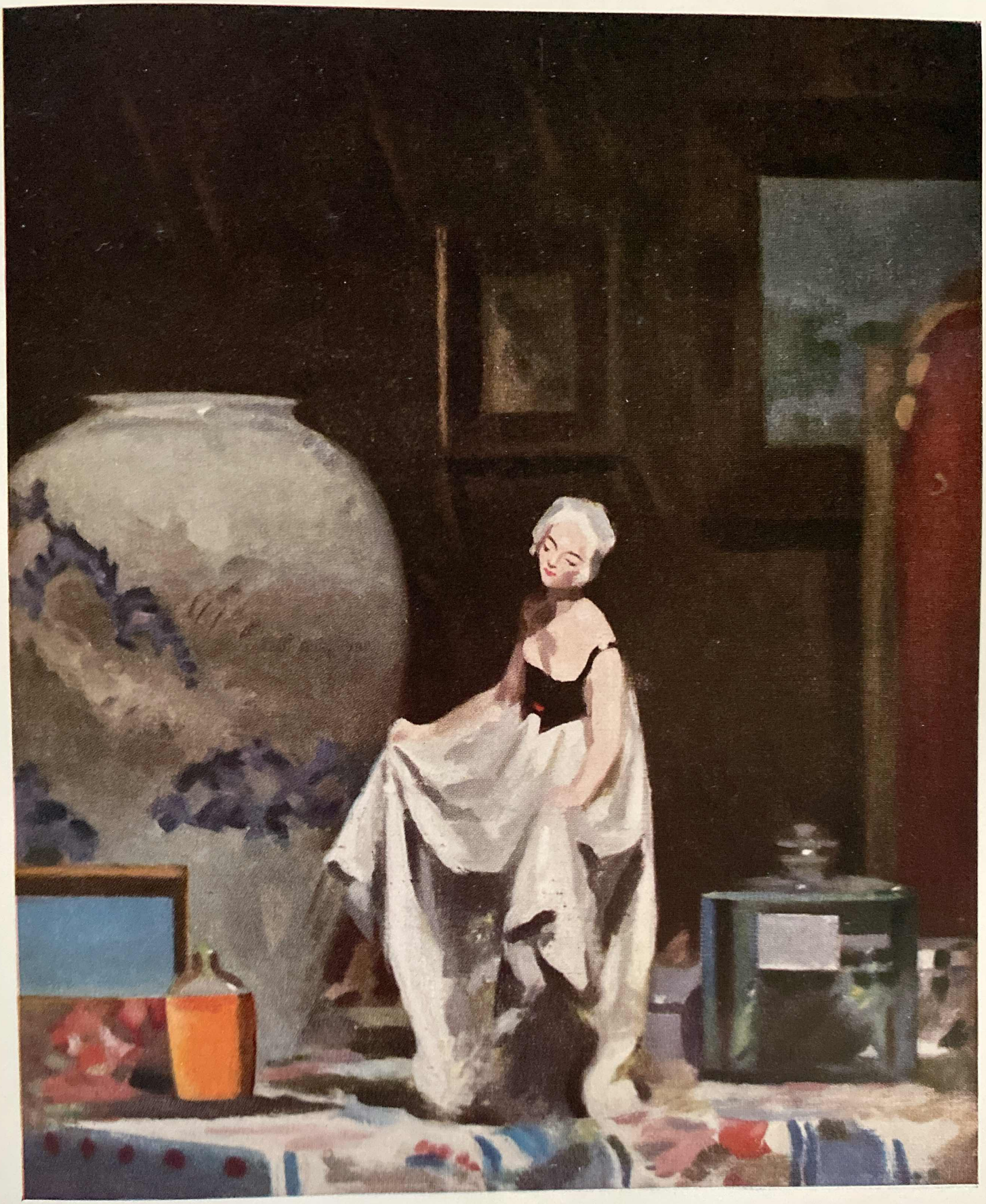
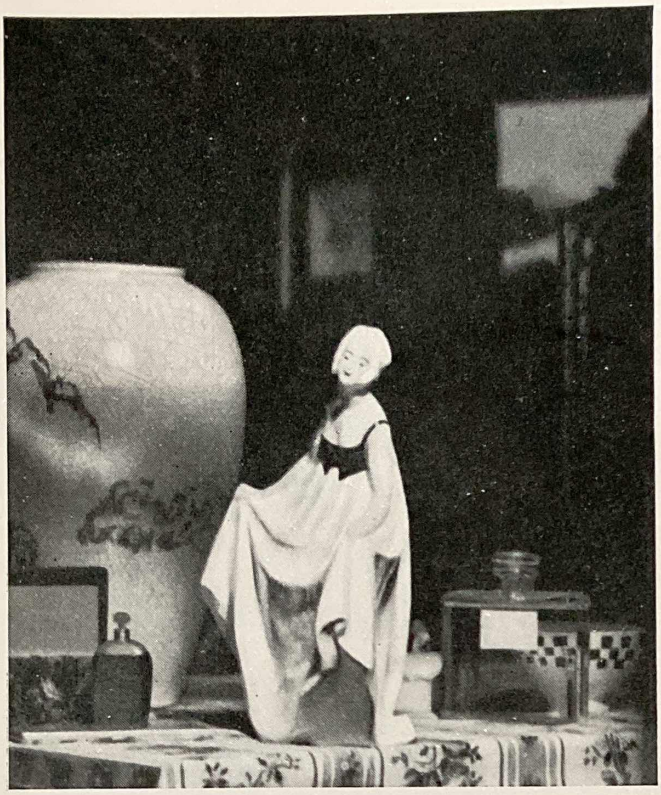


PLATE 70

MAX MELDRUM

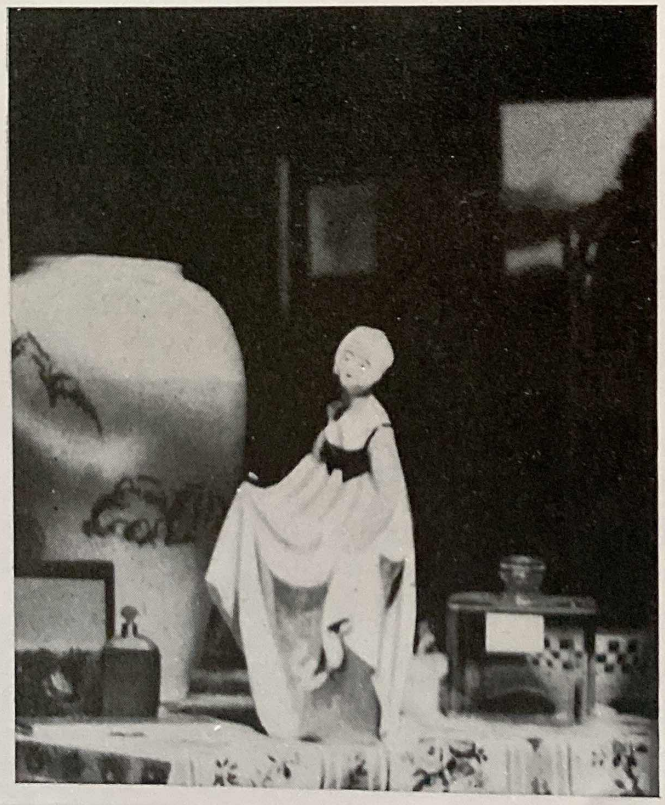
"MY LADY'S TABLE"
(Painted 1927)



A

B
FORMULA 1

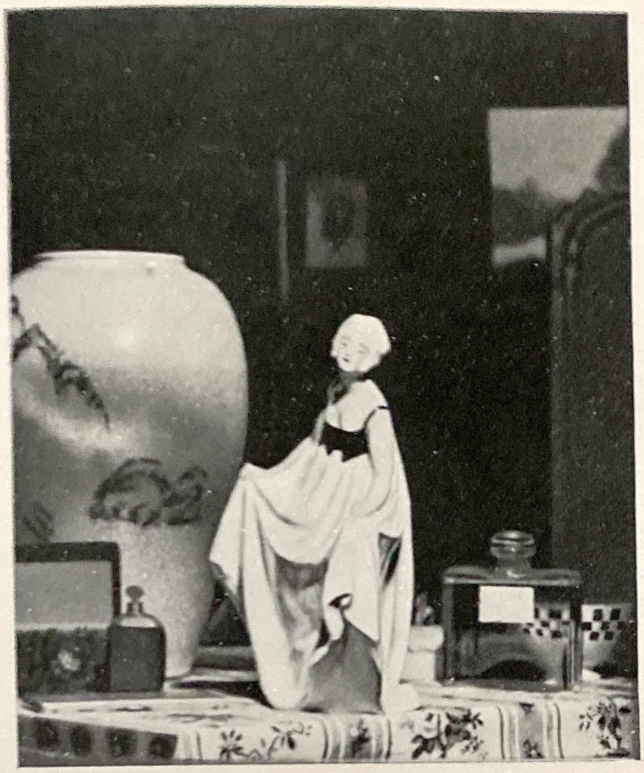
PLATE 71



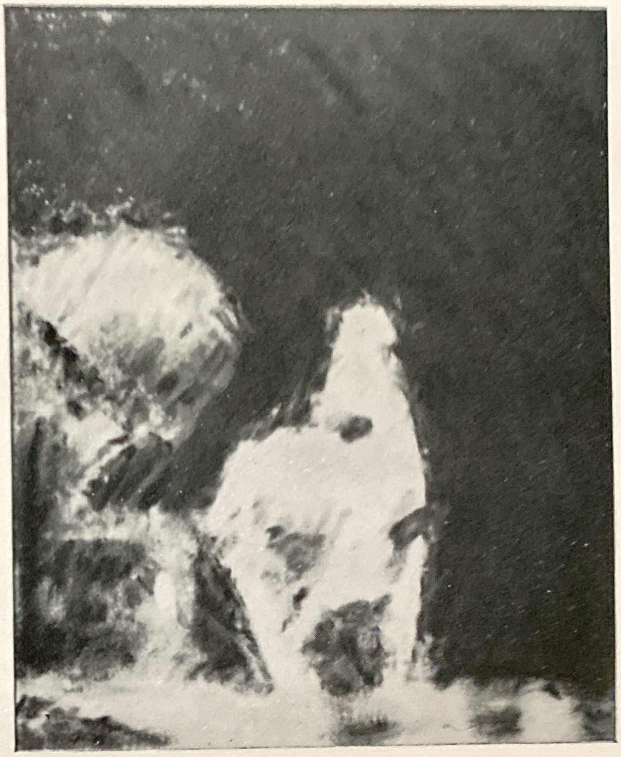
A

B
FORMULA 2

PLATE 72

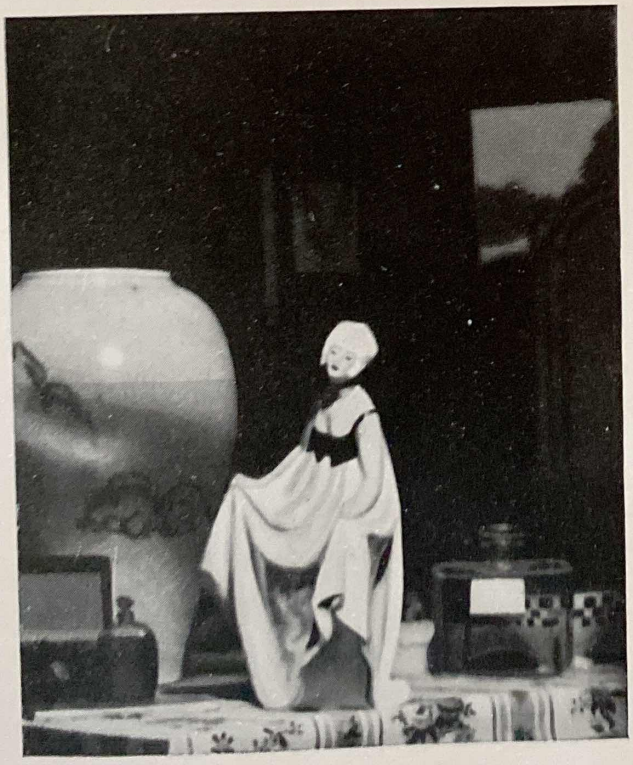


A



B
FORMULA 3

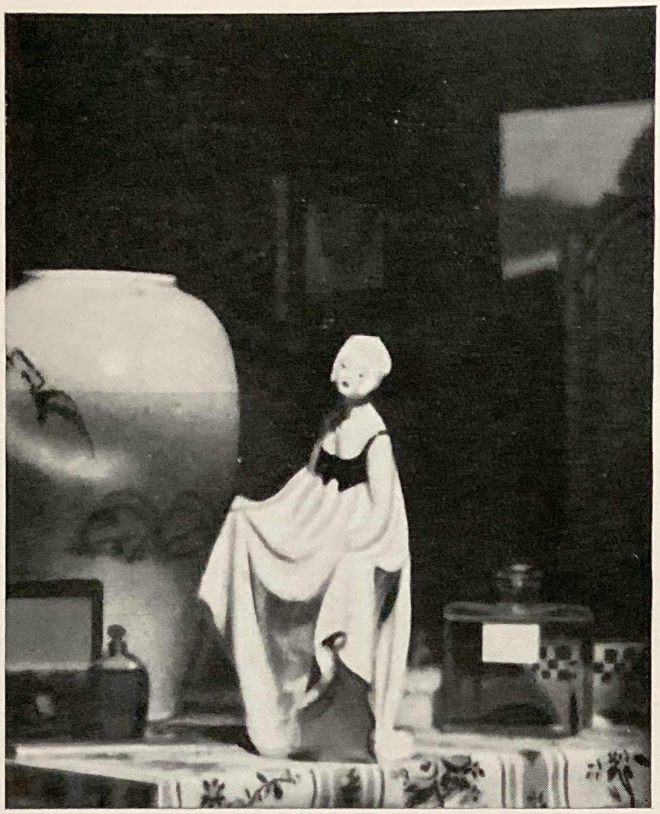
PLATE 73



A

B
FORMULA 4

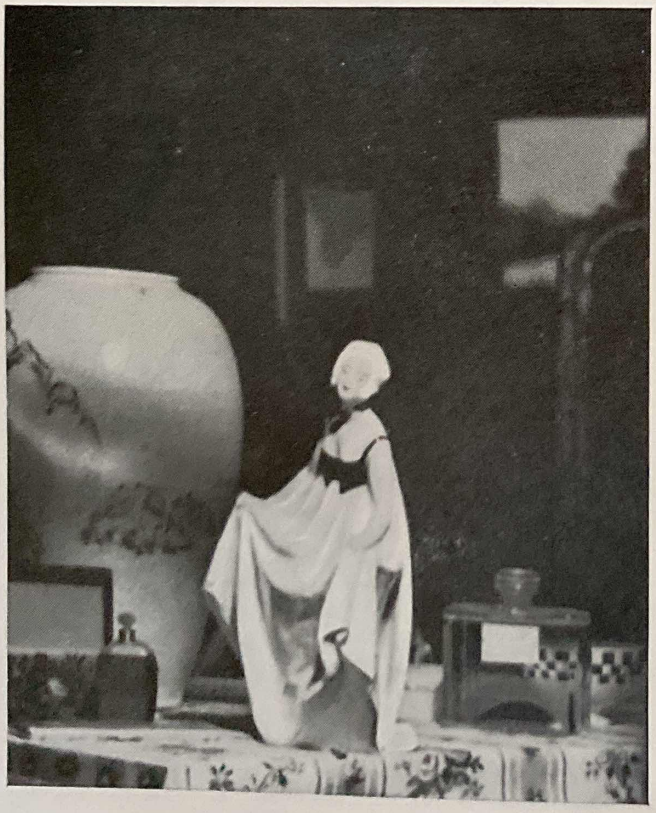
PLATE 74



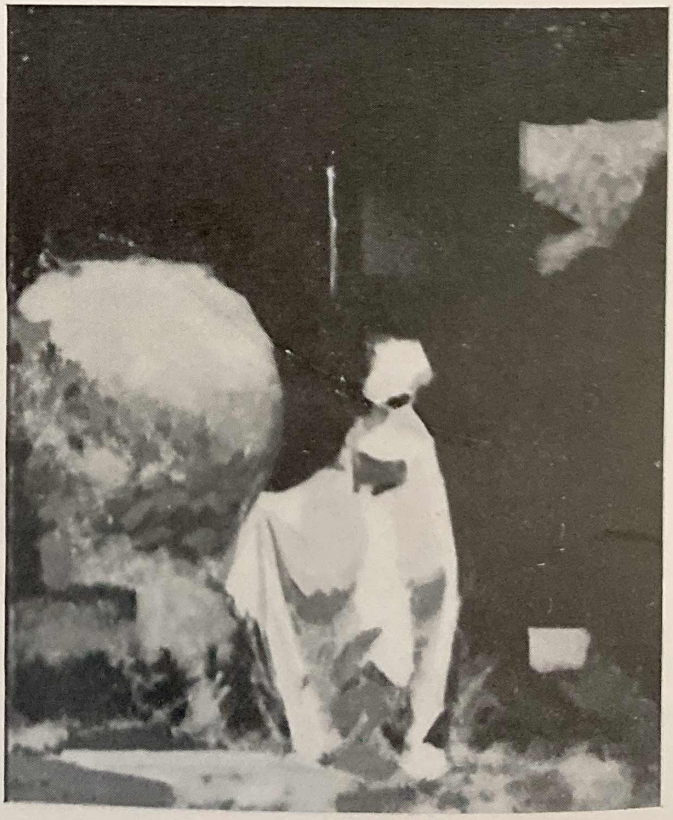
A

B
FORMULA 5

PLATE 75

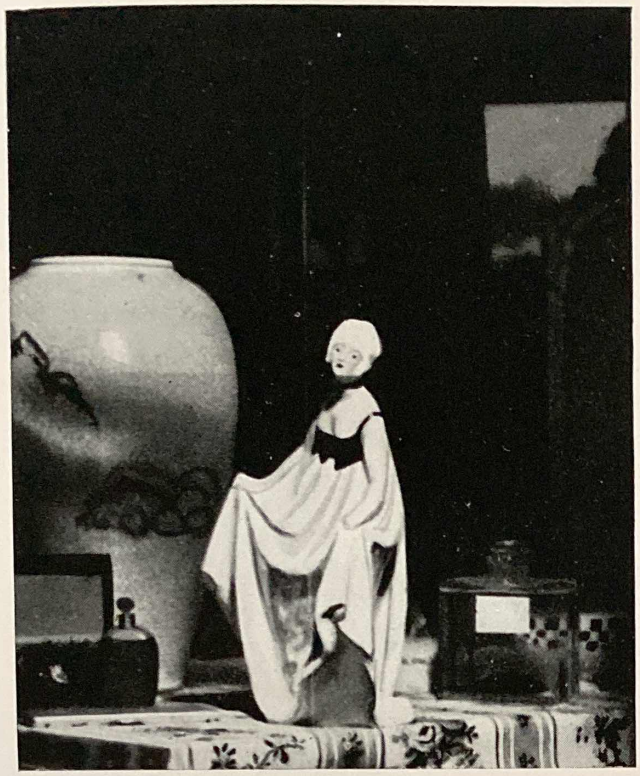


A

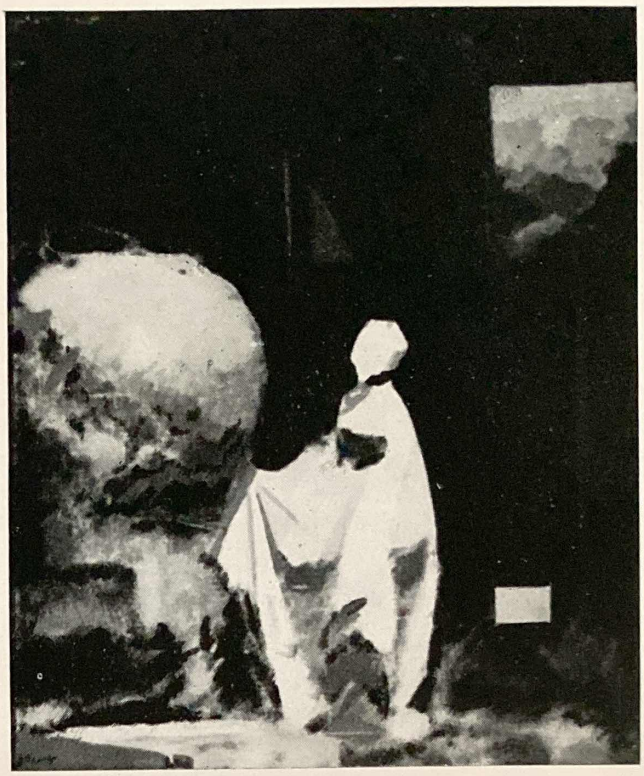


B
FORMULA 6

PLATE 76



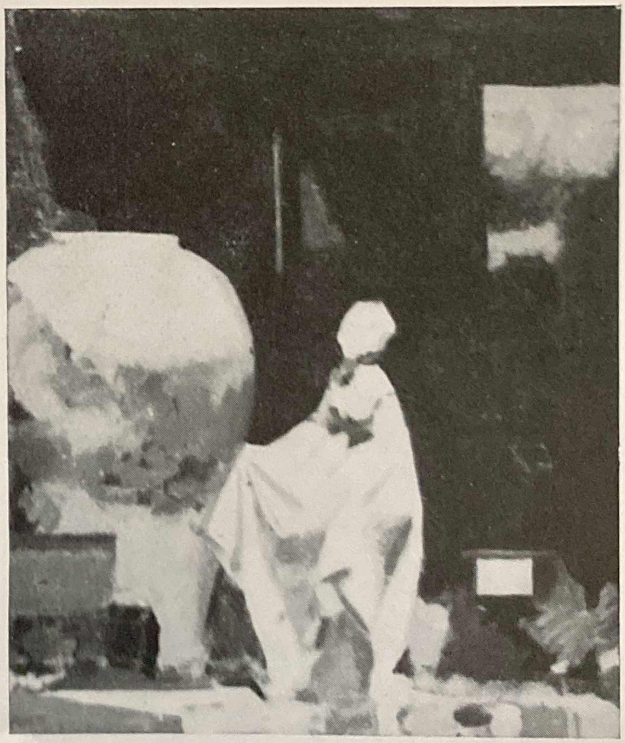
A



B
FORMULA 7

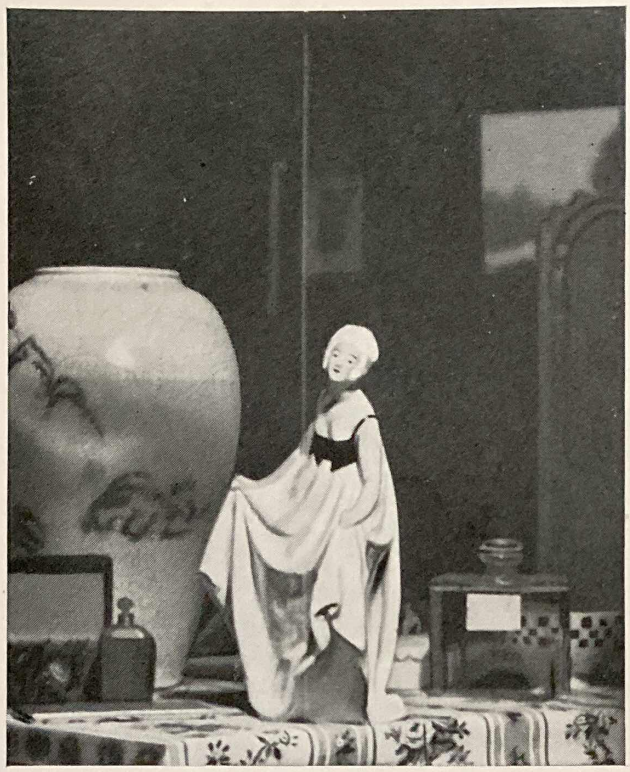
PLATE 77

A



B
FORMULA 8

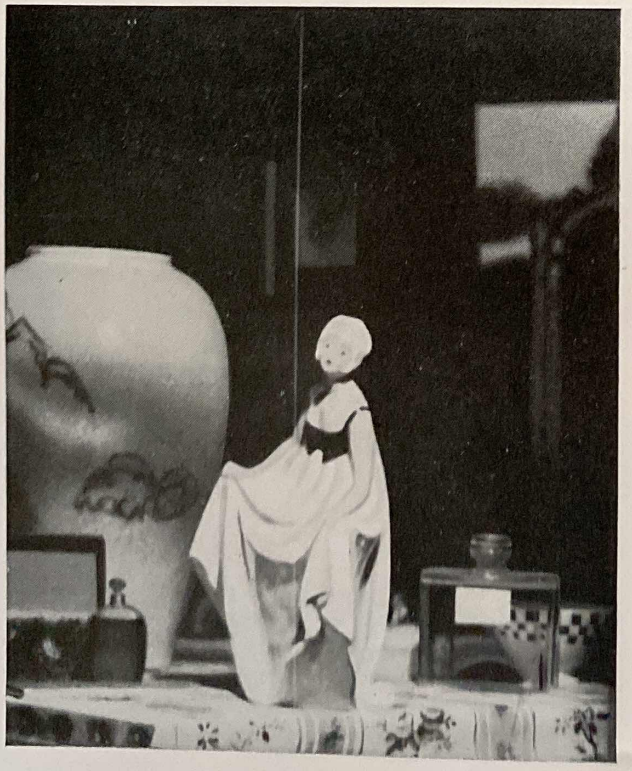
PLATE 78



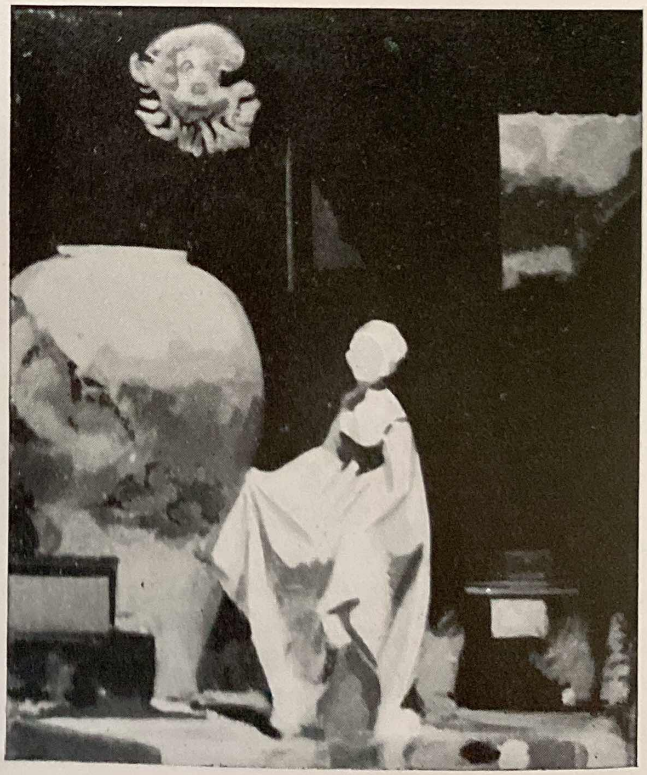
A

B
FORMULA 9

PLATE 79

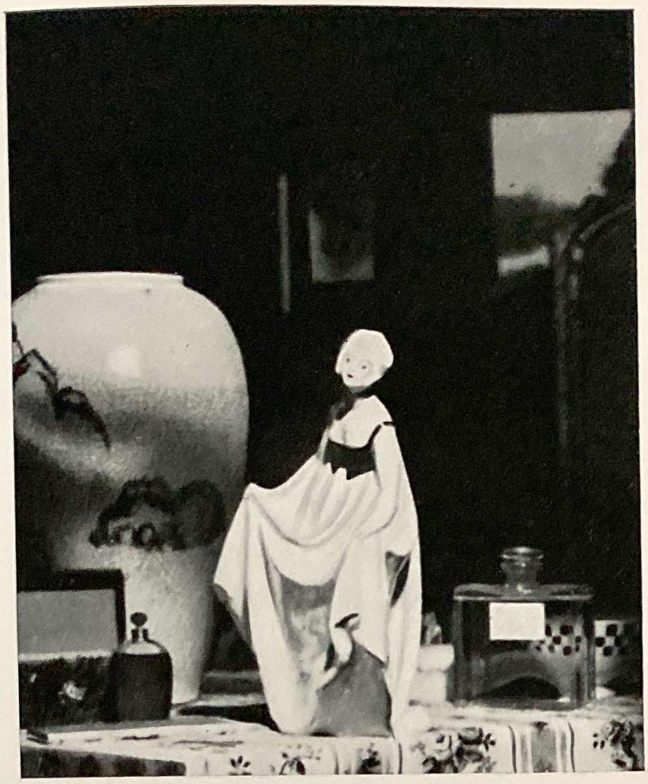


A

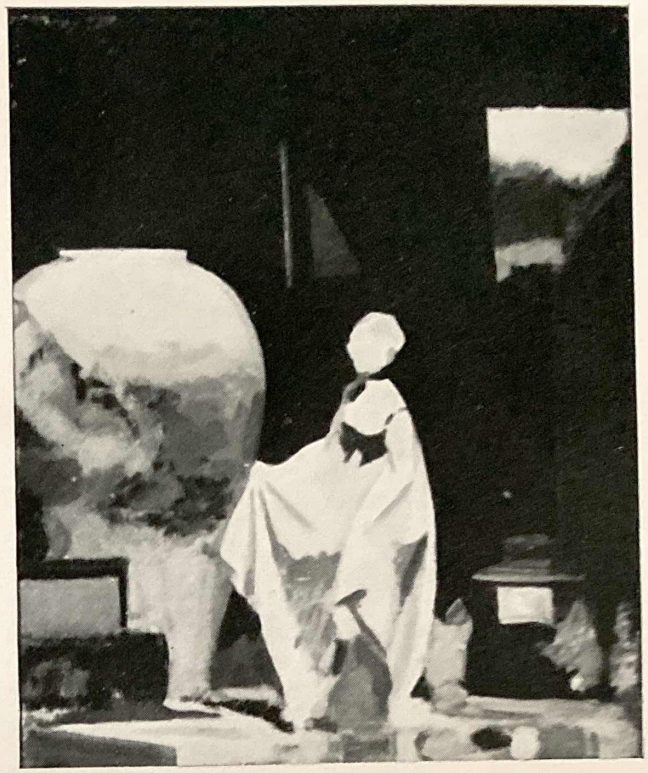


B
FORMULA 10

PLATE 80

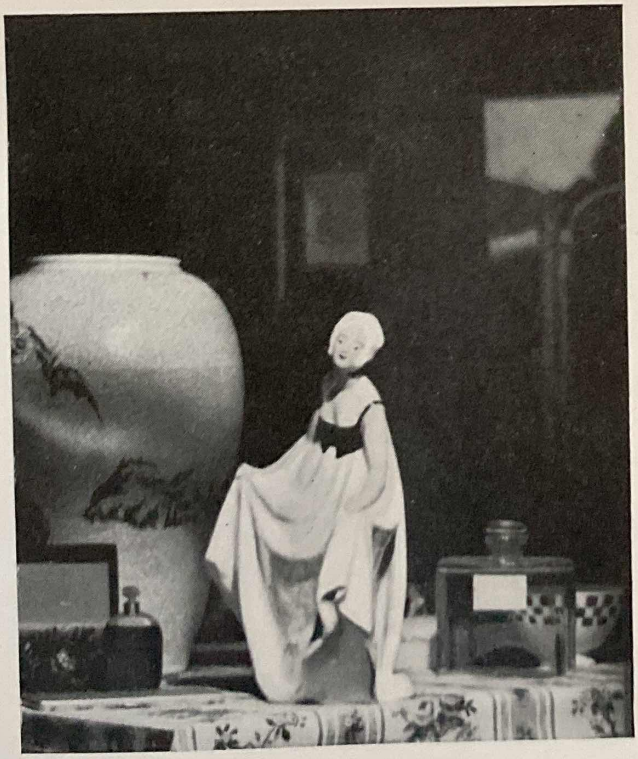


A

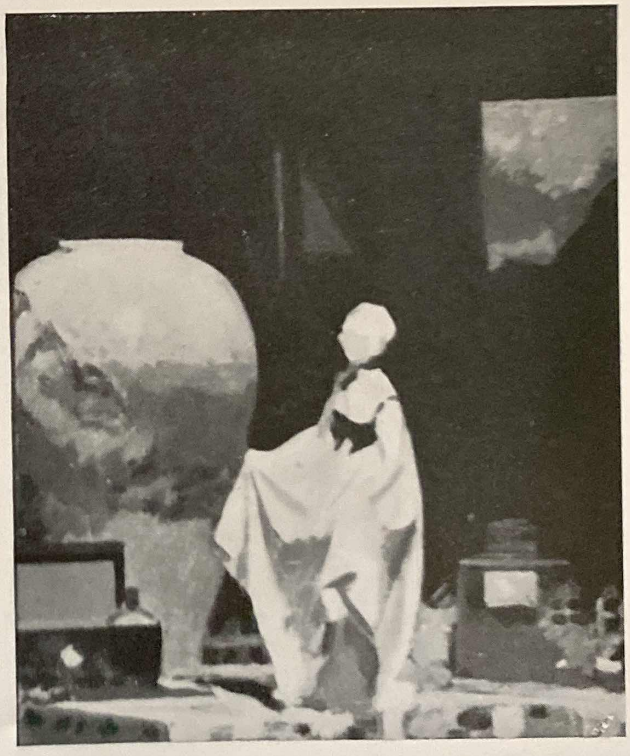


B
FORMULA 11

PLATE 81

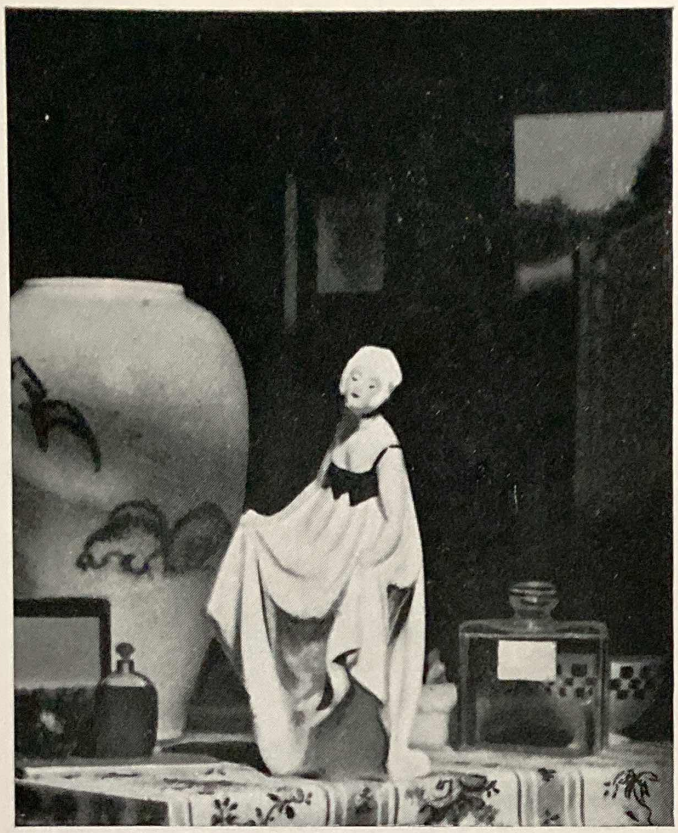


A

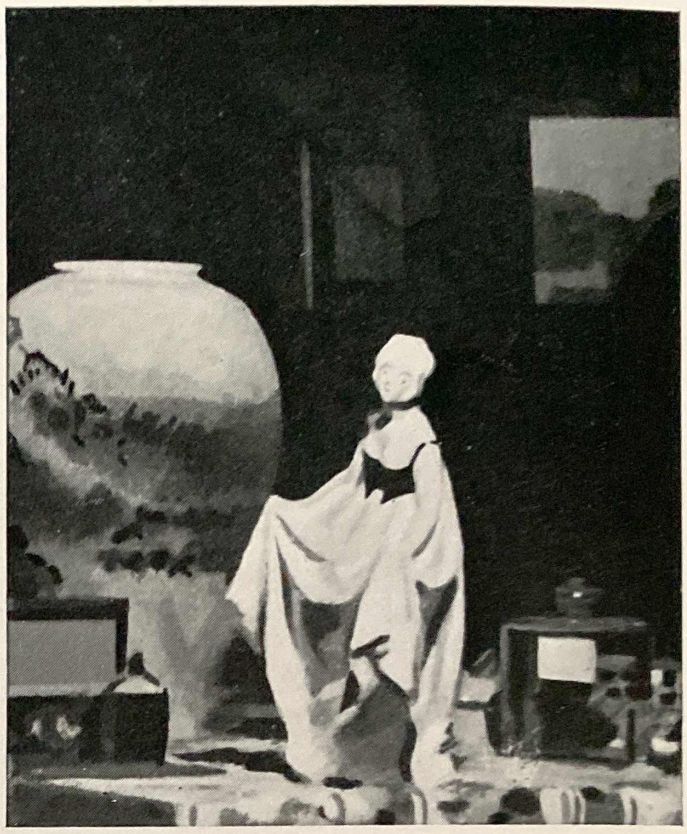


B
FORMULA 12

PLATE 82



A



B

FORMULA 13

PLATE 83

Colour combinations stimulate the eye in the same inevitable and orderly manner as do all other sensorial stimuli. In all sense impressions novelty creates the greatest interest. We pass lightly over accustomed sensations to become arrested by the unusual and this in the degree of its unusualness. As far as our present object is concerned, in the development of the eye from its simplest form to the complex eye of man, nature has always presented varying quantities of certain colours. The words *speed value,* already used in the tonal factor to describe relative attractions, can be applied in the realm of colour sensations to designate the varying appeals of of varying colour contrasts acting on the inevitable attraction which mere newness has for the human eye. This is to say that in ratio with this involuntary attraction, some of them have a greater speed value. If we apply these considerations to the left side of diagram 67, page 158, we shall feel first of all that the relaxed eye is attracted to the red, 3, an elementary colour sparingly used by nature. In this group of seven it is the colour with the highest chromatic speed value. Numbers 4, 5, 6 and 7 are more often seen in large quantities and consequently have a lower speed value; the eye has become familiar with them and passes over them to become fixed on the rarity, red. Number 2, blue, ranks next, indeed it is almost as loud a claimant as the red.

Certain colours are called peaceful. This term has naturally been used because these chromatic sensations happen to be those with which the eye is most familiar—the pale blue of the sky and the green of the fields. They always occupy large areas in any landscape and have thus compelled their involuntary acceptance as accessories to the rarer colours. But nevertheless, in spite of what has been said, the actual tonal values of colours affect the human sensations in certain ways. The pale blue of the sky—a peaceful colour in its tonal degree of paleness—affects the eye vividly, even irritatingly, when transposed into a lower tone such as that used in laundering clothes. This colour, in this particular tonal degree, possesses such a high chromatic speed value that it is much used for posters and commercial advertisements in which speed of ocular appeal is a virtue. From this it will be understood that *the speed value of any colour may depend on the tonal degree in which it is pitched—a combination of the two factors.* Practically all the colours found in natural light phenomena are more or less composites of red, yellow, blue and these primaries as colours in themselves have the highest chromatic speed value. The vulgar effect of certain colour and tonal appositions can be seen in the red-

dish-brown and the blue, numbers 5 and 6 on the right side of plate 67, page 158. Compare the sensation received from them with what we sense from the same two colours in a higher key on the other side. Chromatic variations, like tonal, are discernible within the human range, and this means that the brain fails to notice chromatic variations when they become mere sensations of lightness and darkness. Relevant to this, all the pigments employed by the artist have their own particular chromatic qualities. They come out of the tubes in varying tonal degrees: some of them, the cadmiums and chrome yellows are comparatively high in tone, while others such as ivory black, burnt sienna, raw umber and prussian blue emerge in a state that can only be described as darkness. So much indeed is this true that the painter, if he has his palette in a poor light, may make mistakes and dip his brush in prussian blue instead of ivory black.

Thus all pigments may have two qualities. Those having passed the gamut of tonal appreciation can only be sensed as lightness or darkness and those within this range possess visible tonal and chromatic qualities.

For example, ivory black fresh from the tube, represents only darkness, raised to any tonal keynote in which colour is discernible it becomes the colour grey. What has been called "the inimitable black" of Velasquez depends on this change of tonal keynote. It was not a unique pigment, but simply a black pitched high enough to allow it to be sensed as a colour.

(Resuming all the remarks that have been made concerning plate 67 and allowing for very small divergencies, the result of the analysis is that it can be considered as *a proposition of five tones and eight colours*).

. . . . .

As an addition to the still-life already analysed, let us trace for ourselves the same orderly progression taking place in another series "My Lady's Table," plates 71 to 83, pages 168 to 174. The first reveals a humble attempt to convey the dominant characteristics of tone and form contained in the subject on the left side of the plate. As defined they are seen here as a few irregular light disturbances contained on the lower side of a hypothetical diagonal line stretching from the top right corner. The shapes and placings of these major disturbances were defined in relation to the outside edges of the canvas and revealed by an approximate degree of darkness.

Through the whole series, each stage was defined and tested to determine how far it had succeeded in making the painting more interchangeable. In passing from one stage to another the greatest difficulty consisted in trying to resume the state of impressionistic virginity in which the work was started.

. . . . . .

Lesson Notes:

"Exhaust your formula. Make it do all that it can before proceeding to elaborate a new one."

. . . . . .

"If each time you made a comparison you could look at your work as though you had never seen it before you would unfailingly detect the biggest difference."

. . . . . .

"Don't bother about what things look like when you are working at your canvas. Do what you mean to do in the simplest and quickest way and step back to your focussing point to see how it appears from there. Remember what Corot said, 'A picture is finished when it looks finished'."

. . . . . .

"Don't get too cocky. Say you don't know anything about it, for all the experiences you may have had up to now tell you little or nothing about your own problem. All they do only serve to make you solve the problem more quickly."

. . . . . .

"Let the technical method derive from the intention. If the intention is right you will surely find the method."

. . . . . .

The power of viewing a painting objectively at each stage in its development can only be acquired after much practice. The ability to assume at will this rigid form of mental discipline is the main lesson which the painter requires to learn and his success in doing this is clearly evident in his results. All the significant painters of the past have experienced this difficulty and their survival as epoch marking craftsmen is in direct proportion to their success in maintaining this control over their mental processes. Constable voiced his awareness of the difficulty and his doubt about how far he might be able to surmount it in saying to a friend, "When I sit down to paint out-of-doors I try to forget that I have ever seen a picture."

The inference to be drawn from these statements is clear. It is that great art so far from being an expression of personal ideas and fancies consists in the maintenance of an *objectively impersonal outlook* on the facts of appearances. (E.g., The work of Velasquez is more impersonal than that of El Greco or Murillo and

as a consequence has stood the test of time better. For the same reason the paintings of Chardin remain *modern* while those of Fragonard or Boucher have ceased to interest the serious student of to-day). This doctrine of the impersonality of art will of course sound strange to the "art conscious" people of these times who have been taught that at any cost the modern artist must manufacture a factitious originality, or be excluded from the ranks of the elect. This viewpoint towards an art which has always been marked by its universality results generally in nothing more than exhibitions of arbitrary quantities, dispositions and second-hard material purloined (without acknowledgements) from the pictures of past masters. Such an art, unlike that which has endured, has no ascertainable standard of value and can only be considered as an egomaniacal outburst or — to stretch the quality of charity — the effort of misguidance.

. . . . .

Continuing our analysis of plates 71 to 83 the reader is left at this point to note for himself the differences dealt with from one stage to another, with the exceptions numbers 80 and 81, where conscious mistakes have been made to prove a point. We have said elsewhere in other words that the succeeding rungs on the ladder of depictive progress consist in the definition and pigmental revelation of the greatest difference between the subject and the painting. Plate 80 shows a light disturbance making an unseemly noise in the top left corner introducing at the same time a new form. In all other respects the painting remains the same as in number 79. The cardinal difference here is of course that in this particular place where ocular peace and tranquillity once reigned, a light disturbance now destroys this relative placidity. This difference has been made so tonally caricatural that no other part of the canvas claims prior attention. It demands to be put back to the condition prevailing in number 79. Technically this was an easy task; all that was necessary was to find the tone surrounding the disturbance, to cover it and put the canvas back again to the last valid stage. Formula 11, plate 81, is again formula 10 with the difference that a part on the right has been raised in tone without introducing a new form. This change was actually made with the same tone already existing but with a pigment containing a greater amount of the blue element. To the eye this chromatic difference was so slight that it was practically imperceptible, but due to the limitations of the photographic medium in the interpretation of *human* tonal values throughout

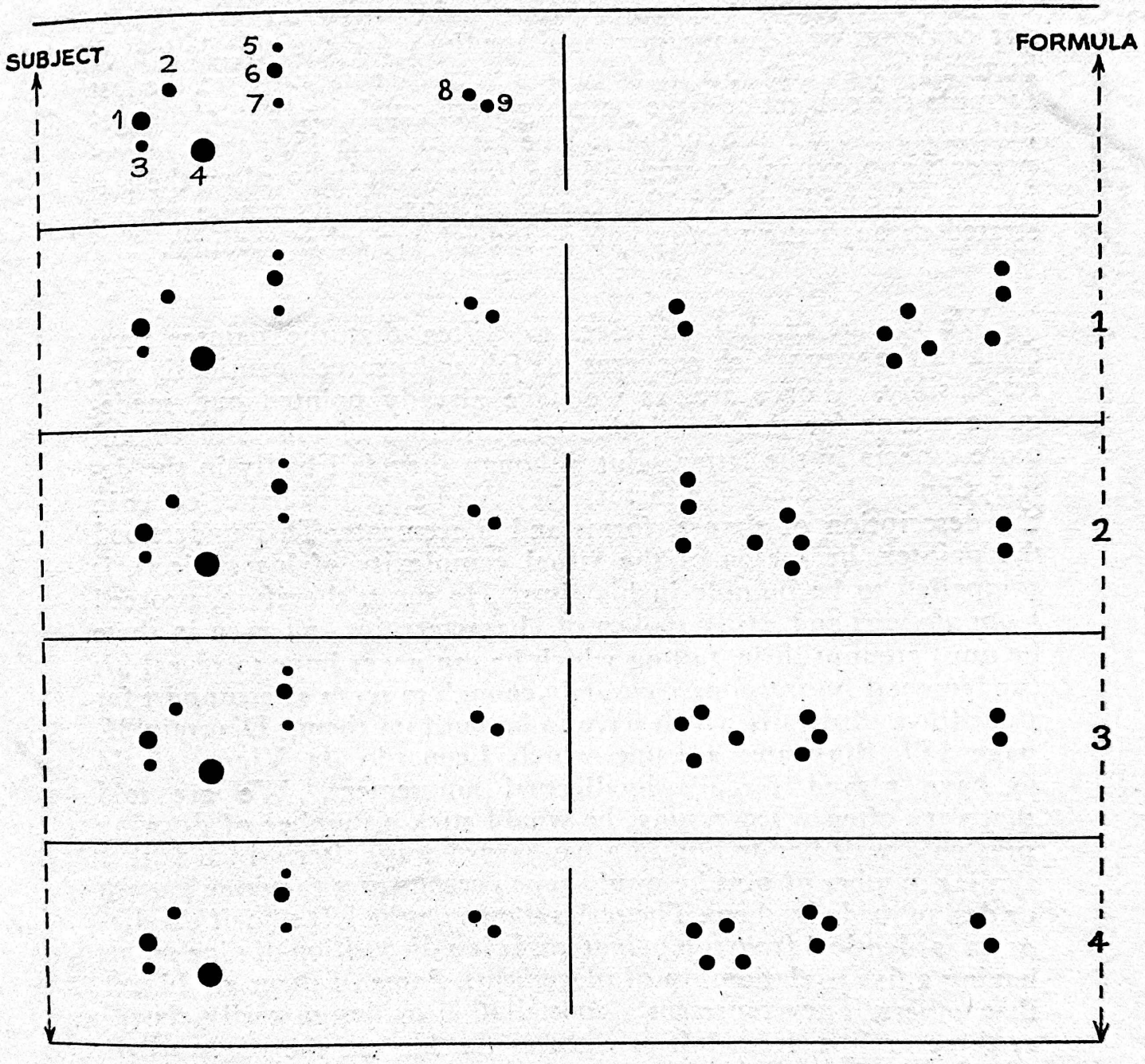


DIAGRAM 84. LEONARDO'S GAME.

the various colours, it appears lighter in the reproduction. (This is not criticism of photography as a medium for the translation of human visual data; it is made to point out that in reality in the last formula the subject and the painting were much more interchangeable than in the reproduction). The last formula 13, page 174, represents approximately, with all the limitations imposed on the artist, the extreme limit in which the interchangeability can be demonstrated through the photograph or indeed any other medium.

. . . . .

We cannot remind ourselves too often that the painter must think in the way which concerns his job and proceed cautiously and responsibly. Words are, as we have already pointed out, inadequate means for the description of sensations of tone and colour, more especially the latter. But although they fail badly in the description of these evasive factors they can be used to better effect in the description of shapes, forms and placements. This understood the painter, by reason of the visual complexity of his subjects, is compelled to be humble in his aims. He must, therefore, proceed from obvious and easily spoken of characteristics and even in these he must attempt little, failing which he can never hope to reveal his fundamental impressions accurately enough to serve as a support for the edifice of details which have to be built on them. Diagram 84, page 179, illustrates a game which Leonardo da Vinci is said to have played for his intellectual amusement. We are told that very often when resting, he would stick a number of drawing pins on a wall beside him in a haphazard way, after which with a similar number of pins he would try to reconstruct the same pattern or design made by them. The series shown on the left side of the diagram is identical from top to bottom. It is a disposition of nine points having a fixed relationship of placements. Some of them are bigger than others. They represent a constellation or design easily classed as three groups, from left to right as the largest, the intermediate and the smallest. Added to this we could say that, as groups, the largest and the intermediate appear to rub shoulders while 8, 9, take up a position of solitary grandeur. At this stage we could say more about these dispositions, but since at present we are trying to demonstrate the *humble* approach of the painter, we will stop here and show these statements in formula 1. Such as it is the sense of three groups of different sizes is clearly marked and the independence of the smallest group is felt spontaneously. Proceed now from formula 1 to deal with the next obvious difference. All that we have said about the first characteristics of the subject remains as true as

before in spite of the fact that the two larger groups appear on the right instead of on the left. Formula 2 shows these two groups now on the left as they should be, but since they have so far been considered as two groups which must at all costs appear bigger than the smallest group, no particular pains have been taken as yet to determine their placings as the largest and intermediate groups. Let the eye run back now from this formula to formula 1 and note how these apparently trivial observations are inevitably making the formula look more like the subject. Still maintaining control of the truths stated in numbers 1 and 2, the next observation is that the biggest group should be to the left of the intermediate. Formula 3 shows how this difference has been attended to. Formula 4 shows an even more timid approach than any of the preceding. It was stated here that in the smallest group one of the points appeared more to the right or left of the other. The number of practical questions which could be asked of this simple disposition of points is infinite. Every new statement that can be made about any visual problem, answered and revealed visually, inevitably leads to a further stage in the elucidation of the problem. In the formulation of the four formulas a basis of relationship was adopted approximately, to which reference was made in all the dispositions from 1 to 4. The basis chosen was the distance between the extreme points on the right and left, 1 and 9.

Appended here are a few questions for which the student may find answers. Sensing a series of hypothetical lines between any two of the points, which of these lines is nearest to the horizontal? If this line is not completely horizontal in what way does it tilt and to what degree? Between which two points is there a hypothetical line nearest to the vertical? The slow and easy method of solving accurately the problem of inclinations has already been amply described on page 60 and since the experienced painter has found that the consideration of inclinations and lengths are mutually helpful he would naturally claim the assistance of these two aids.

To demonstrate how far considerations of inclinations and distances are mutually helpful let the reader take a piece of paper mark three points on it and consider the relative difference of length, and the hypothetical inclination between each. Let one of these lengths and inclinations be accepted as a basis of relationship and he will find, in working this simple problem out in this way, that it is easy to make the exact figure which the points represent.

If we note here that in this small province of considered inclinations thirty-six questions can be asked, we begin to imagine the

almost countless number of questions which the student must learn to invent and answer for himself before he can hope to be a master painter.

Finally, questions can be asked from this diagram concerning the size of these dots:—Which is the biggest? Which is the smallest? Which is the next biggest? Which is the next smallest? Are any of them the same size?

Continue in this way until the problem of inclinations, sizes and lengths is solved.

. . . . .

To conclude these remarks stressing the efficiency and inevitability of the cautious approach which the painter in his desire for accuracy has been compelled to adopt, consider two more examples. The eighth part of a given length is required. The average person if asked to solve this problem would more than probably try to make one big jump from the whole to the eighth part only to find that his approximation, when measured out and tested, has over- or under- shot the mark considerably. The reason for this discrepancy is that any small inaccuracy in this eighth has become highly magnified as it has been measured into the whole. In contrast to this hasty and inefficient method, the crafty painter will solve the problem in a sure and more rapid way. He will begin with the knowledge that it is much easier to find the half of any length than the eighth. This half he will mark out, after which he will proceed to halve one of the halves,—which is, of course, a quarter of the whole. The eighth is finally marked by a subdivision of the same nature. The eighth found in this way will, if reasonable care has been taken, be found to be surprisingly accurate. As another instance of the ignorance of the public concerning the cautious way by which the painter builds up his surprising results consider the remark which every painter has heard at some time or other: "I could never be taught to paint. Why, I couldn't even draw a straight line." The real fact here is that no experienced painter would dare to assert positively that he could draw a straight line. He would rather say that he could build one up from an approximation of something suggesting a straight line which he would progressively correct from its most characteristic deviation from straightness. To him the attainment of complete straightness would depend entirely on the labour that he had put into it. Technically to make the appearance of straightness the painter mixes up a lighter and a darker tone of paint and opposes them against each other as near as possible to produce a straight track for the eye. He then moves

them against each other from both sides, starting from the most obvious characteristic of unstraightness, succeeding eventually in making his paint dispositions produce a feeling of straightness perfect enough to stand the test of a straight edge. Summing up here the illustrations which have formed the main theme of this chapter, 70 to 83, pages 167 to 174, demonstrate the sum total of the knowledge of appearances which has been, as in other sciences, slowly built up by the true research painters of each period—craftsmen taking their place on the main stem of the evolution of the science. They represent mentally and technically the rise in the development of the art of depiction from the portrayal of pictorial symbols to the actual revelation of visual phenomena in the order of cerebral awareness; they demonstrate a method of seeing which is universal and lastly, they show complete concordance with the physical reception of ocular sense data in the procession from the whole to the part.

. . . . .

Lesson Notes:

"What is recognized as good technique is the result of knowing what you want to do and wanting to do it so much that you put it down instinctively in the most practical and simple way—just as you would scale a fence to escape from a wild bull. The greater the master the more unconscious and varied his handling."

. . . . .

"I find you are in front of your canvas most of the time, instead of at your focussing point. This shows that you are experimenting technically with the hope that results will happen accidentally. Remember that you must carry with you from your focussing point a carefully considered thought about what you have seen and that you can only germinate valid thoughts on appearances at a certain speed. Find out what this speed is and stay within it. As an exercise and disciplinary measure time yourself; for every five minutes spent at the focussing point paint for two minutes at the most. Capable painters are not more interested in the mere act of painting than writers in the act of writing. The love of using the eye for its use alone is the principal component in the make-up of an artist. If you love looking better than dabbling in paint you will infallibly become a painter—but if you love painting better than looking and thinking about what you see you will only be an imitation artist."

. . . . .

"The 'bigness' or 'smallness' of your work has no relation to the size of your brushes or the amount of paint on your canvas. If you have a big outlook you will do big work. Dabbling with big brushes and little ideas only results in a petty form of art."

. . . . .

"When you have seen a satisfying picture in a gallery don't come back to the studio to repeat mechanically the handling employed by the painter, thinking that this will make an equally satisfying picture. The particular handling adopted

by a master is governed by the condition of his canvas and paint at varying stages. At the stage in which you are you have your own way of doing things. Examine therefore the brushmarks on a masterly painting, not with the object of imitating the handling, but to find out the thoughts that lay behind them. If you diagnoze these correctly you can do them in your own particular way, a slower way perhaps, than that used by the master, but in its own way effective. Your way may be slower but you can only acquire greater speed with greater practice. Don't think you have produced a masterly painting because you have used big brushes or a niggling picture because you have used small ones for small ideas may lie behind big brushmarks and big ideas behind small brushmarks."

. . . . .

"Don't try to explain more than nature explains."

. . . . .

"The mere painter pits himself against his fellow artists while the true artist measures himself against the absolute laws of nature. To become one of the elect you must resign yourself to being beaten in every encounter but you can at least try to make it an honourable defeat."

. . . . .

"You find painting difficult! That is because you do not realize the nature and exigencies of your work and expect it to produce results with insufficient data. Painting is like the game of tennis—more or less strenuous according to the adversary you have chosen. In this game you are matched against nature, a pitiless opponent and if you wish to succeed you must make a man's game of it—not just a little distraction."

. . . . .

"The more you are a pupil the more you try to paint like a master; the more you are a master the more you try to paint like a pupil."

. . . . .

"There is no virtue in putting paint on your canvas unless it sends your work forward."

. . . . .

"Don't imitate a master's brushwork. His technical methods are not necessarily those by which you can produce results. Even the master does not employ the same methods all the time. The application of his paint and the quantity used will be governed by the state of his canvas and the conditions under which he has to work. Choose your own technical methods, learn to think like a painter and you will yourself lay down your work in masterly brushmarks. Masterly in the true sense—that they produce the proper effect on the eye."

. . . . .

"The analysis of ocular phenomena is an exhausting work, 'a conflict not a pastime'*. You must know when to take a rest. If you continue to fiddle when your mind is exhausted your work will only reflect this condition. As far as your progress is concerned five minutes responsible work is worth more than five hours of aimless experimenting."

* Millet.

"You can't consider everything at once. So you may as well take the trouble to find out what you should do—in every case deal only with the biggest difference. Make a caricature of a form rather than leave it weak. At least a caricature shows that characteristics have been consciously considered. As Millet said, 'I would rather do nothing than express myself feebly'."

. . . . . .

"The impulse of the student is to get to his canvas—the impulse of the master is to stay at his focussing point."

. . . . . .

"Don't be obsessed with one particular part of your canvas. Let your eye rove all over it."

. . . . . .

"Don't be proud of your brushmarks. They have no more value in themselves than the unconsciously acquired characteristics of your hand-writing. However badly you may have written or painted be proud of the thoughts and ideas you have succeeded in expressing—if you can!"

. . . . . .

"How easy to change colours, forms and tones when there is very little paint on the canvas!"

. . . . . .

"There is little brush technique that can be taught, for from start to finish your brushwork must accommodate itself to the condition of your canvas and the stage you are in. The clearer the thought the simpler the technique."

. . . . . .

"There are three types of painters. The first disdains the use of common-sense reasoning, pretexting that the act of thinking might stay the flood of his inspiration (he is sure he is one of the elect and subject to such fits); the second, equally proud of himself in another way is so sure of his formula that he disdains to take the trouble to note how far it accords with sensation; the third, the true artist, goes from his point of departure (sensation) through dispassionate reasoning to his original starting point which is at the same time that of the normal layman. Never forget to complete this circle every time you touch your canvas, for if you neglect to do this your work will become either insipid and depressing, or mechanical and irritating."

. . . . . .

"If the big things are placed exactly, the small ones fit in easily. *The things which are most easily seen are the most easily defined,* so take the easiest way every time."

. . . . . .

"Try to make your canvas look like a hole with things in it."

. . . . . .

"Follow up a tone as far as it goes on any part of your canvas and you will find that the tonal schemes of nature are not so complex as they appear at first. If you have done your work intelligently you should be able to turn your back to it and paint from memory a fair approximation of the tonal range and keynote, relationships of the more obvious shapes and the gamut and character of the principal colours employed. If you cannot do this your work has not been controlled

and you have made no progress even though your doting friends may consider that you have produced a masterpiece."

. . . . . .

"Try to remember that no part of your canvas is more important than any other."

. . . . . .

"Tell yourself always that you know nothing. Remember that for the most accomplished craftsman each new subject in its mathematical arrangement of tonal, formal and chromatic relationships is something about which he knows no more than the inexperienced student. Nothing in his past experience will help him. All that he brings to the new problem is his acquired ability to solve visual propositions."

. . . . . .

"The student is afraid because he tries to do more than the master. The master is unafraid because he tries to do less than the student."

. . . . . .

"The beauty is in Nature, the Art is in the craft."

. . . . . .

"A small difference in tone or colour will appear as such if it covers a small area. If it covers a large area it may become an enormous difference. Quantity is an important factor in dispositions of tone and colour. A marked difference on a large area can become imperceptible on a small area."

. . . . . .

"Approach your canvas with a tidy mind; try always for the maximum result with the minimum of material. The economy of means in any handicraft is the characteristic of the master craftsman."

. . . . . .

"Short of a coincidence there is always one of the three factors (tone, form, colour) lagging in your work. Diagnoze and deal with it. The feeling of conviction which we derive from a master craftsman's work is produced by the perfect balance of the three sensations."

CHAPTER V.

Subject-Matter

UNDER THIS CAPTION THE TERM SUBJECT-MATTER WILL BE USED AS generally understood—arrangements of things and objects (Column III, Subjective Perception, c.f. pages 36 and 37).

The art of depiction being the visual realization of the knowledge of appearances the choice of subject-matter for the student is of capital importance since he can only make steady progress insofar as his mind is clear about the exact nature of his job and what is of equal importance, that he pursues a course of study within his limitations. Unfortunately, although the world is full of aspiring artists, most of them have started painting in unpractical ways. Because of modern conditions the initial problem before them is more serious than that which concerns the student of other arts. For example, in most of the big cities to-day at least one conservatorium exists in which practical and traditional theories are taught. In these institutions the student is provided with the traditional theories of his craft which help him to avoid all the blind alleys which might prevent him from making consecutive progress. Of course, no school can produce what is known as the "genius," for this *rara avis* only attains his airy position at the point, where having mastered the valid traditions of his craft, he adds something which in turn becomes part of the tradition.

It is common knowledge that the art of music or the playing of an instrument is taught through a series of carefully thought-out progressive exercises, which if persisted in produce results in proportion to the amount of energy and work expended and in this respect the student of music is better provided for than the student of painting. For the latter no such common-sense method of teaching exists in these times and this deficiency in the teaching of the craft can be clearly traced to the abandonment of the older and more practical apprenticeship system in favour of the less efficient methods of modern academies and art schools. It is very obvious that the painters who graduated from the older curriculum were all within their limitations as craftsmen developing progressively and consistently to the ends of their lives. In contrast to this

happy state of affairs the graduates of modern art schools do not make the same steady progress and from this we must conclude that in some way or another the modern systems are incomplete. Under the old method the young painter was apprenticed to a master workman to learn the craft as it existed in his time. Like any other apprentice, he had to start on simple jobs: becoming used to the run of the studio, sweeping floors, running messages, cleaning palettes and brushes, grinding colours and other such elementary tasks. So engaged, he saw pictures being prepared by the more advanced apprentices and he saw the master himself at work putting the finishing touches to these preparations. In this way he grew in knowledge and technique until he was promoted in the craft hierarchy and incidentally let it be noted that the master knew just how far to promote him, just how far he was capable of doing his new job at least fairly efficiently. Ultimately the apprentice in his turn was finally accepted by the guild as a master-craftsman. The spirit of those times in contrast to that of to-day was quite obviously one which conceived of steady progress and is all expressed in the dictum of Leonardo, "It is a poor craftsman who does not surpass his master."

An analogy may be made here between the old and new systems. Long before the young surgeon performs operations on his own responsibility he has seen them done many times by a master-surgeon and has already acquired a grasp of the theoretical side of his craft and its technical applications. His course of study is therefore in its own particular way similar to that of the apprentice painter. Not so is the art student of to-day equipped; he joins an academy in which he is allowed to develop slovenly habits which in the apprentice would have brought about his quick dismissal from the workshop of his master who naturally expected the most efficient aid he could get. To specify some of the slovenly habits: leaving his palette dirty, neglecting to clean his brushes properly, wasting material in vain mad schemes of his own and consuming valuable time by dawdling and engaging in windy discussions with his fellow irresponsibles. These evils are magnified if the teacher, (who after all only attends at intervals between which the mice will play) is a product of the same unsatisfactory system. A good workman is known by the state of his tools and although it may appear hypercritical to mention these bad habits they must be noted because when later on the student becomes aware that they effectually block his progress he will find it exceedingly difficult to rid himself of them; also if at some later date he is lucky enough to find himself

in more competent hands, so will his new professor find it difficult to hold him down to the simple obligations of technical good behaviour.

It is only too clear that this modern method of teaching cannot produce great craftsmen and further that it is the direct cause of the decline in craftsmanship which has developed hand in hand with the growth of the school system to finally culminate in a form of art called "modern", in which the lack of technical mastery is apparent to the ordinary man and woman.

. . . . .

Lesson Note:

"For goodness sake, man, don't prate about your personality! However did you become aware that you had a personality worth expressing and why do you imagine that other people should be interested in your petty ideas? An apprentice carpenter would soon get his congé if he dared to destroy good material on the specious plea that his sacred individuality demanded such silly manifestations of sheer vandalism. Rid yourself of all such dishonest ideas; be frank enough to acknowledge that your work must conform to some rational standard of appraisement; that you are first and foremost a craftsman and that you do your work more or less well. The average artist is a sentimental megalomaniac. He places himself on a pedestal far removed from the many vexed questions which concern the welfare of the community and which are confronted courageously by normal men and women. That is, of course, precisely the reason why he is only the average artist. The true artist appeals to the interest of the people at large and is always the searcher for the truth, interested in human affairs. He believes with Romain Rolland that if art cannot live side by side with the truth it is better that it should perish."*

. . . . .

The continuous progress which marks the life-course of a great painter is never found in the academy graduate. We note rather that from the moment he produces results which please the public his progress as a craftsman ceases and begins as a picture-maker. From then on his work only shows progress in the paltry art of pleasing the public and his art ends in a blind-alley, every picture becoming more dull and mechanical than the last—a reflex of his technical incompetence.

Corot's reflections quoted on page 19 tell us distinctly how as a product of a modern academy, he was finally compelled to scrap all the dead-end knowledge he had been taught and to try by himself to acquire a more practical method of painting. Since the abolition of the apprenticeship system the few painters who have succeeded in becoming great craftsmen have had to perform this same act of courage—to start afresh. All this means of course, the loss of much valuable time, a wastage which did not occur in

*"Si l'art et la verite ne peuvent vivre ensemble, que l'art crève."

the training of the apprentice and which imposes a severe technical handicap difficult to regain.

The failure of contemporary systems of art education cannot be insisted upon too much. Many significant painters within recent times have spoken in scathing terms about them. In the course of a conversation Whistler was asked this question: "Well, Mr. Whistler, can you not see anything good in modern academies?" To which he replied, "Oh, yes, a little. By chance the genius will pop in, find the studio warmed up and the model posed on the throne ready for him." Such was his opinion on modern art academies expressed in his usual flippant way. Another strong condemnation of present day methods was made indirectly by Jean Jacques Henner (1825-1905) (Prix de Rome 1858). After spending several years of study under the artificial, unpractical system taught in the Beaux-Arts, Paris, he was required under the terms of the award to spend a further three years of the same misdirected study in Italy, and like most of the winners of this coveted prize, severed his connection with officialdom completely estranged from the real art of his time. Obliged to make a living, he luckily conceived a type of picture which happened to please the public and thus ensured his livelihood. Although his work is now little known many people may be familiar with his once popular subject-matter (nude women, generally only one in each picture, resting pensively under a studio light with a poetical landscape behind). The Beaux-Arts curriculum had effectively killed him as an artist and with little variation he made and sold pictures of this sort and amassed a considerable fortune. Towards the end of his life, being a bachelor with no relatives to whom he could leave his money, he decided to use it to assist future Prix de Rome winners. Only too well aware of the nature of the handicap which had been imposed on him by the unpractical curriculum of the Beaux-Arts, he knew that they, like himself, would be left in a forlorn condition. With this in his mind, he founded a bequest to provide an income for them for three years after the completion of the course to enable them to accommodate themselves and perhaps find their feet as practical artists. In spite of his good intentions, however, his bequest has been, as far as art is concerned, useless, for none of the students benefiting by it have ever shown that they were able to surmount the bad habits into which they had fallen during their stay at the Villa Medici. It is unfortunately true that no national system of assistance for the true artists of each period has yet been found, in France or elsewhere. Such schemes as have been put into execution have only resulted in

the encouragement of a kind of artist able by reason of his very mediocrity to tolerate unpractical methods. The nearest approach to the fulfilment of the intention of the Prix de Rome competition happened when Delacroix was placed second with a picture representing the crossing of the river Styx by Dante and Virgil. This picture has now received national honours. It hangs in the Louvre and in looking at it and remembering the type of work which has always gained the prize we do not wonder that Delacroix was passed over. It is as far as we know the only picture entered for this competition which has received the national imprimatur.

Relevant to many of the remarks made here concerning the inadequacies of academic training are these words of Jean-Baptiste Simeon Chardin. It is left to the reader to note how far his statement applies to present considerations. Chardin was undoubtedly the greatest and humblest painter of his day. He stands far above his pretentious, opportunist contemporaries and was content to find his pleasures in the painting of simple still-lifes that he might the better tell the true story of the art of depiction. These words, quoted by Diderot, were addressed to the admission jury of the Academy. They are given *in extenso* because of their importance:

"Messieurs, messieurs, not quite so fast! Seek out the worst of all the pictures here and think that two thousand unfortunates have broken their brushes between their teeth, in despair at ever doing anything as bad. You call Parocel (a now forgotten painter), a dauber and he is—if you compare him to (Joseph) Vernet; but this same Parocel is a rare man—compared to the multitude who abandoned the career they entered with him. (François) Lemoine used to say that one needed thirty years of practice to know how to keep the qualities of a sketch and Lemoine knew whereof he talked. If you will hear me out, you will perhaps learn to be indulgent. When we are seven or eight years old, a pencil is put into our hands. We begin to draw from the cast eyes, mouths, noses, ears, and afterwards hands and feet. Our backs have long been bent over our boards, when we are put before a Hercules or an antique torso, and you have not been a witness to the tears that the Satyr, the Gladiator, the Venus de Medici, the Antaeus have caused to flow. Had these Greek masterpieces been delivered to the vengeance of the pupils you can be sure that they would no longer arouse the envy of their masters.

After having withered for days and nights before immobile and inanimate nature we are presented with living nature and suddenly all the preceding years seem wasted; we were no more at a loss the first time we held a pencil. The eye must be taught to look at nature; and how many have never seen and never will see it! It is the agony of our lives. We have been kept thus for five or six years before the model when we are delivered over to our genius, if we have any. Talent does not declare itself in an instant. It is not at the first attempt that one has the honesty to admit one's liabilities. How many attempts, now happy, now unhappy!

Precious years have flown before disgust, lassitude and boredom overcome the

student. He is nineteen or twenty when, letting fall his palette, he remains without resources, without a trade and without a character because it is impossible to be both young and virtuous when one has naked nature constantly before one's eyes. What shall he do, what shall he become? He must throw himself into one of those low conditions whose doors are open to misery, or die of hunger. He chooses the first alternative, with the exception of some few who come here every two years to expose themselves to the beast; the others, and perhaps the least unhappy, wear a plastron on their chests in some fencing school, or a musket on their shoulders in some regiment, or a costume on the boards. The story I have told you here is the story of Belcourt, of Lekain, of Brizard, some bad comedians out of despair of being mediocre painters . . . . He who has not felt the difficulties of his art, does nothing that counts; he who, like my son, has felt them too soon, does nothing at all; and you can be sure that most of the high conditions of society would be empty if one were admitted only after an examination as severe as the one we must pass.

Adieu, messieurs; be lenient, messieurs, lenient"!

It must not be thought that in this insistence upon the danger of unpractical systems of art training we are engaged in flogging a dead horse, for the animal is still very much alive. There is no reason why a proper system of art-education should not produce complete artists, each one within his individual capacity, for although isolated cases occur where the graduates of these false systems become ultimately significant artists, such exceptions are rare and are characteristic in that these men were all rebels against the prevailing official methods, only becoming significant inasmuch as they had become aware of the impracticability of the systems which they had in innocence accepted. To read the statements of one or two of these recalcitrants is sufficient evidence of the desolate failure of official schemes in the furtherance of the cause of art. Theodore Gericault studied in Rome as Prix de Rome scholar. Having chafed under this fruitless method of study for a number of years in Paris the continuance of the same dull round in Rome caused his patience to give way and after twelve months there, he returned to France. Back in Paris, he with others led a revolt from the sterile, dry academic models set by Poussin, Ingres, David and others. Notwithstanding his recognition of the uselessness of the system from which he broke away the work that he did at this period shows the stultifying effects of his art education. It is probable that had he been fortunate enough to have escaped from the clutches of official bumbledom he would have become a great painter. He complains:

"The Government has erected public schools of drawing which are maintained at great expense and to which any youth is admitted. Frequent competitions seem to stimulate constant rivalry, and at first glance this institution seems to be the surest method of encouraging the arts. Neither Athens or Rome offered their citizens greater opportunity of studying the arts or sciences than do the many schools of all

kinds in France. But since their establishment I have noticed with disappointment that they have produced an entirely different effect than had been expected and that instead of being useful they have become a real hindrance, because, *though they have given birth to thousands of mediocre talents, they cannot pride themselves upon having formed any of the most distiguished painters,** since these men have in a way been themselves the founders of schools, or at least have been the first to spread the principles of taste . . . . Supposing that all the young people admitted to our schools were endowed with all the qualities needed to make a painter, isn't it dangerous to have them study together for years, copying the same models and treading approximately the same path? After that, how can one hope to have them still keep any originality? Haven't they in spite of themselves exchanged any particular qualities they may have had, and sunk the individual manner of conceiving nature's beauties, that each one of them possessed, in a single uniform style? The nuances that can survive this sort of confusion are imperceptible; and each year we see with disgust ten or twelve compositions, carried out in about the same way, painted from one end to the other with a disheartening perfection and showing no trace of originality. If obstacles discourage the mediocre talent, they are, on the contrary, the necessary food of genius; they ripen and exalt it, where the easy road would leave it cold. Everything that opposes the triumphant progress of genius irritates it, and induces that fever of exaltation that overthrows and conquers all to produce its masterpiece . . . . Unfortunately the Academy does better: it snuffs out those who have some sparks of the sacred fire, it smothers them by not giving them time to develop naturally and in wishing to produce precocious fruits robs itself of those which a slower ripening would have made tasty."

Consider also the testimony of another Prix de Rome winner, who in turn revolted, became a good painter but whose work, like that of Gericault, shows clearly that he was never entirely able to break clear from the system which had caused him to lose so much valuable time.

"It is not that our director bothers us, because we, or I at least, hardly see him except in the street or on the stairs. When I first came, though, he tried to get me to go and draw at the Academy. I asked him to excuse me, and when he insisted I insisted too, answering that such an occupation was not at all to my taste, and that I urgently requested him to allow me to direct my own course of study, which he did, and did completely. What I do not like is the way we are all forced to live together, and so forced to follow approximately the same studies. It would be better if the Academy in Rome did not exist—that is to say, if there were no royal sheepfold in which twelve sheep are kept and are made to get up, work and go to work at the same time. Each scholar should be sent abroad with a thousand *ècus* a year for two years; and be free to go to Rome, Bologna, Florence, Venice, to the mountains, Flanders, Switzerland, wherever he pleases on condition that he gives evidence of his studies. If he has nothing to send home—unless because of illness—his fellowship would be withdrawn. This would be the only way of getting men of genius and original work"—Girodet.

We stop at this point to remind the reader that these lengthy quotations are inserted to demonstrate through the words of their

*The italics are ours.

authors the inadequacies of modern art training methods in comparison with the more efficient systems of training by apprenticeship. If the examples quoted seem to imply particular criticisms of the official French system this is only apparent. It just happens that this system is richer in written testimonies from its graduates.

The lesson is clear—all the painters who have achieved eminence, whose works still live and who painted at first under any sterile system, were finally obliged to learn the practical craft of painting for themselves. This resulted in the loss of much time and it was late in life before they learnt to make the pothangers and hooks of the language of painting—an elementary exercise mastered by the apprentice in his early years. It is also significant that we do not find graduates of the old system complaining about the discipline imposed on them by their masters. Each and every one acquired from them a sound knowledge of the craft to which all that was required to be added was diligence and practice. Some of them became greater than their masters, because all that they had been taught established a firm basis for all that could follow—no rupture occurred in their lives as painters—hence no disappointed recriminations.

Official schools of art in the natural course of events must sooner or later become clogged with ritualistic impedimenta which gather inevitably like barnacles on the hull of a ship. They become inelastic; rules, regulations and bequests for specific purposes, at one time thought to be practical, become obsolete although the curriculum remains unchanged.

As an example of one of the defects of the modern system consult plate 37 D, page 79. Here we see the technical expedient *drawing* illustrated. Although, as has been pointed out elsewhere in this book, this method was made obsolete by Velasquez, it is still taught in "modern" schools. No "drawing in the mass"* here; instead a number of meaningless, patiently worked out symbols having little or nothing in common with objective perceptions.

In view of all that has been said and quoted, the question as to what is a practical method of study for the student demands serious consideration. Let it be stated once again that the painter's job concerns the interpretation of natural schemes of the tones and forms and colours by which nature reveals perceptions of things. (Column III, page 37). As these dispositions are ever changing—some very

* Corot.

quickly, others very slowly—the former may impose on the young painter a speed of definition which he may not as yet possess, but which he may gradually attain on subjects which change in a more leisurely way. If he chooses his subject-matter wisely he will remain on the safe side and elect to study at first some of the more static combinations of visual phenomena. (The word static is used here relatively, for indeed no such word is really applicable in the sphere of visual phenomena). In other words, he must consciously try at all times to work within his limitations, for if he attempts to work outside of this frontier line, complete failure will result. Consequently to make steady progress in the knowledge of appearances he must take care to under-estimate rather than over-estimate his speed of definition and should consider carefully, before beginning his work, the conditions which his subject-matter imposes. He will accordingly omit from his course of study, all out-of-door effects in which objective visual data change rapidly. For him this kind of subject does not allow sufficient time to define an all-embracing formula, however simple. Unfortunately, most beginners are apt to start on outdoor subjects with the mistaken idea that trees, bushes, hills and skies are easier to paint than heads and other objects in the studio. Actually if an equal standard of accuracy is demanded of any subject, landscape painting is the most difficult. But it would not be easy for the student to appreciate the truth of this statement if he and his friends were to accept his landscapes without question, while taking exception to the same standard of accuracy expressed in his portraits. For since his valid depictive knowledge remains on the same level irrespective of the subject-matter, his landscapes and portraits are painted equally well or badly and any critical differentiation here is caused by a variable standard acting unconsciously. As we have said before, standards of criticism vary in ratio with human interests, which is to say that the more we are interested in the subjects portrayed the more exacting will be the standard of criticism applied. To be specific, what we are most interested in is our own species, with the result that a more exacting standard of criticism is applied to portraits. Inversely human interest in the depiction of trees and shrubs is comparatively superficial, and although any of these objects have their own individual characteristics the artist can satisfy himself and others if he knows enough about them to convey their *common* but not their *individual* characteristics. The prevalent belief that some artists have a genius for painting portraits and others landscapes has been referred to. This false idea derives from complete ignorance of the unconscious variation of the critical standard, for indeed

a head or a tree is for the painter merely a set of shapes in varying tones and colours and the factors which form a nose or a tree are equally difficult or easy to define if the same standard of accuracy is exacted. All the great painters were essentially craftsmen with a degree of depictive skill indifferently applicable to all forms of subject-matter.* It was entirely the result of his life conditions that Corot used his knowledge mainly in the depiction of outdoor scenes and Velasquez in the portrayal of the inhabitants of the Escorial. Significantly enough, the majority of "landscape-painters" would hesitate to show how far the valid knowledge which they possessed could stand up to the severe test exacted in portraiture whereas complete craftsmen such as the two cited would confidently apply their knowledge to any form of subject-matter. (c.f., Corot, plates 15 and 16, pages 266 and 267). In general the popularly established landscapist would excuse himself if asked to paint a head and take refuge behind the accepted idea that his knowledge was of a specific type, peculiar to the painting of scenes and quite distinct from that of the portrait painter, while the latter, surer of his craft, would welcome a change of subject-matter as a diversion and with little fear of the consequences.

Lesson Notes:

"There is no excuse for getting nervous since you are painting a still-life. It will stay in position as long as you wish. Take your time and carefully think out each move and although you go slowly you will at least go surely. At any stage of your work your first care should be to define the greatest difference between your painting and the subject and to deal only with that. It can only be one of tone, form or colour, and may be found at any part of your canvas."

"We all prefer compliments to adverse criticisms but take care not to let this human weakness lead you into accepting unreservedly the more or less flattering remarks of your friends. Their criticisms are, for the most part, unconsciously dictated by personal likes and dislikes which have nothing to do with the laws of art or the state of your progress. Remember that you alone possess the scale by which your progress can be checked. Ask yourself whether you know more about what you see than you did yesterday and if you can impartially answer this question in the affirmative you may feel assured that you are making progress."

Having eliminated landscape as unpractical subject-matter for the beginner we may now consider in this search for possible and

* "The painter is not worthy of praise who does only one thing well, as the nude, or a head, or draperies, or animal life, or landscapes, or other such special subject; for there is no one so dull of understanding that after devoting himself to one subject only and continually practicing at this, he will not fail to do it well."—*Leonardo da Vinci.*

progressive depictive exercises, indoor subject-matter. Here we find that rooms lit from the North (in the Southern Hemisphere, South) provide a relatively stable light producing the same sense data from the same focussing point during the whole day time. Rooms or studios lit in any other way allow the sun to enter and more or less reproduce the unstable conditions found out-of-doors.

Another type of subject-matter to be shunned is portraiture, for although here the lighting does not change as in landscape the position of the model will, causing changes of form. Next on the list we may place a taboo on the painting of perishable objects (e.g., flowers) since the slow-moving beginner will be unable to acquire sufficient data before they die and change their appearances. By this process of elimination we arrive at a more suitable type of subject-matter for the beginner—*imperishable objects in a fixed light viewed from a fixed focussing point thereby allowing the student time to compare, analyse and construct practical working theories.* In working on this kind of subject-matter the student must work for the acquisition, however slowly, of the knowledge of the orders, degrees and qualities of the visual phenomena contained in his problem and the attainment of increasing speed of definition and execution. These aims held firmly in mind will ultimately lead to the mental and technical speed imperatively necessary in the more exacting types of subject-matter described.

In the early stages in the development of the art of depiction paintings were mainly composed of symbols and hieroglyphs and the tonal and chromatic factors were only suggested. As in the writing of letters and words the postulation of symbols and ideograms could be done at the speed which the *writer* found most convenient. He may have taken three days or half an hour to mark a symbol—all that mattered was that the symbol should be capable of translation and interpretation. As the science of appearances progressed all depictive factors requiring translation were eliminated to make way for spontaneously understandable visual phenomena and with the removal of these intermediate agents between man and his objective sensations this art became, as we have said, more difficult and exacting as the painter became more and more the interpreter of schemes of visual phenomena in a constant state of flux. Because of this the art of painting has become increasingly difficult and so much so that the painter, equipped to perform a truly modern form of depiction, is engaged in a task so physically exacting that his job has become one of almost superhuman difficulty.

Lesson Note:

"If you want to be a modern artist you must rid your work of these symbols which are not objective statements on appearances. Remember that the art of depiction started as an applied form. As it developed, pigmental statements which required translation into the facts of appearances were slowly eliminated. During this long course of development no distinction was drawn between pure and applied forms of the art of painting. We have now arrived at a stage where the distinction inevitably imposes itself, in fact without this distinction further progress is barred. The confusion existing on this point is undoubtedly the cause of the state of art confusion confronting the present-day art student. It is a necessity which is the obligation of these times. I have already told you often enough that the pure art of painting is a story conveyed through paint which no other medium can tell as accurately —the orders, degrees and qualities of the phenomena of appearances."

. . . . .

Up to the invention of oil paint and due to the inadequacies of the older media painters were obliged to confine themselves mainly to the symbolic illustration of subject-matter which interested their patrons and the public. When Cimabue's* picture of the Madonna was carried through the streets by the elated populace its enthusiasm was not in itself a criticism of its qualities as a painting, but rather that the picture conveyed sufficiently to it by a mixture of readable symbols and elementary visual facts the story it wished to hear. Such as it was, the speed at which Cimabue was required to work was, in comparison with the time limit imposed on modern masters, as the crawl of a snail to the flight of a greyhound in pursuit of a hare.

. . . . .

It is of passing interest here to remark that a painting of inanimate objects in a fixed light is called a *still-life*. This contradictory union of words was coined to describe a new type of subject-matter —fish on a plate, dead hares, dead deer surrounded by guns and game bags. Later on the term was enlarged to include the painting of flowers or anything inanimate painted in a fixed light. Coming into favour about the XIV century it was the result of the greater technical scope allowed by the invention of the new medium which made possible the revelation of the undiscovered beauties in small things, hitherto untranslateable by the more rigid and limited media of the past. Since its adoption it is not too much to say that painters have learnt the major part of their craft through this particular form of subject-matter.

Velasquez, who can be called the first great modern because he

* Cimabue 1240-1300 (circa).

was the first painter to make pure visual data his subject-matter, painted many still-lifes and through them became the finest craftsman of his period. Similarly, Chardin, another painter of still-lifes, who left us a legacy of works of great beauty and educational interest (synonymous terms, these). Although he also painted subject-pictures, his reputation and place in art rests almost entirely on the more objective interest contained in his simpler subject-matter, for any artist, like a student, can best exhaust the full extent of his knowledge on subjects which allow the fullest opportunity for study. The works of his contemporaries,* although more popular and sought after at the time are now definitely placed as being of secondary or applied orders and as such could be expunged from the history of depiction without any loss.

Since the student's method of study must be directed towards the acquisition of the objective knowledge of appearances and since this necessitates a state of mind which he can only maintain consciously he must therefore choose to study from subjects which remain constant and which by their very natures promote an objective state of mind. It follows then that if he can discover subject-matter in which the interference of subjective concepts is impossible, he will have found the ideal subject for study purposes.

Having listed various kinds of subject-matter and classed them in their orders of practicability we come to the absolutely perfect method by which his efforts can be confined within the realm of objective appearances (Column II, page 36)—a method in which all subjective concepts are eliminated. We refer to the exercises already described, plates 31 to 36, pages 69 to 74. Persistent practice in this form of study (meaningless patches of tone, form and colour) must ultimately bring about the particular state of mind in which all depictive factors become easily resolvable. Unfortunately this method is a gruelling form of mental discipline except in as far as the student is content to be satisfied that through it he is producing not what other people might call results, but that he is acquiring the objective state of mind of the perfect craftsman.

. . . . .

Lesson Note:

"Try to think of the piece of nature you are painting as a flat surface covered with patches of colour in certain tones at different places. Inversely, try to think of your picture as though it were a piece of actual nature. In the first case you will

* Boucher, Greuze, David, Nattier, Fragonard, etc.

reduce your subject to the possibilities of the medium and in the second you will feel more readily all the parts of your picture which are utterly impossible to imagine as realities."

. . . . .

The courage necessary to succeed as a painter is of a high order. The pursuit of knowledge is a conflict not a pastime and only he who is spurred by the ideal of intellectual honesty and accepts the exigencies of his task until he ceases to be afraid of them can ever hope to become a master-craftsman. The great painters of the past were not primarily manufacturers of attractive wall furniture for underneath all the impositions of their patrons they were first and foremost students humbly content to work for the knowledge of appearances.

. . . . .

Lesson Note:

"The ability to appreciate and understand pure forms of art is the characteristic of the adult mind, the mark of a high state of mental development. Savages and children deck out facts in fantastic dresses where civilized adults just as instinctively take them off to discover the greater beauties which they conceal."

Synopsis

The following is a list of possible subject-matter in order of practicability and in which the same degree of accuracy is exacted.

1. Out-of-door effects. In these, tones, forms and colours change continually at differing speeds. The most impossible form of subject-matter for the student.
2. Portraits (moving objects) in a fixed light. In these, tonal extensions and degrees and colour relationships remain fixed, but forms are liable to change. Although this type of subject is slightly more practical for the student than number 1, the painting of it, however, will be automatically subjected to a more exacting criticism. This balances more or less in another way the difficulties involved in the painting of landscape.
3. Inanimate, perishable objects in a fixed light. Much more practical than numbers 1 and 2.
4. Imperishable objects in a fixed light. More practical than number 3 but not as yet excluding the possible risk of the intrusion of subjective ideas on things. (An example of this kind of sub-

ject-matter is seen in the plaster cast of a hand in plate 37 B. page 79).

5. The analysis of the orders and degrees of visual phenomena defined on meaningless patches of tone and colour in which subjective concepts can find no place.

N.B.: The patches should be practiced on for some time in monochrome and when a certain facility is acquired the student may add the third factor, colour, to his exercises.

. . . . .

Lesson Notes:

"If at any stage of your work you find it difficult to manage the three factors leave out the least important, colour, and work for the time being in monochrome. If you succeed in learning something in this way take another canvas and transpose the same set of tones and forms into various colours. No matter what colours you may choose, if your monochrome gives a distinct sense of reality the same result will prevail through the colour transposition. Even in monochrome the job of painting is difficult enough and if we fail here it can only be due to having attempted too much—we have run too far ahead in the order of impressions leaving the more advanced impressions insufficiently understood. When this happens, ruthlessly knock out of your work all details outside of your control. It will pay you to do this, although it takes courage for then your work will automatically reveal the next thing to be attempted."

. . . . .

"Don't exhaust all your reserves. Creep up to their limits slowly. For instance, the edge you have made there is as sharp and precise as though it had been done by a sign-writer. Edges of forms in nature possess a certain softness. Define the most precise and sharp form in the problem, make it deliberately a little bit softer than you think it should be and relate the qualities of other forms to it. If you exhaust all your reserves your work will tend to look coarse and this holds good in the other factors with which you have to deal. Restrain yourself—it takes less strength to play FF on the piano than to play PPP".

. . . . .

"There's not much sense of unity in your portrait. All the various features are tonally at war with each other. Establish if you can the simple set of tones which makes your forehead turn round and try them on various places where you think the plane of the head is receiving the light at the same angle of incidence. These tones will, of course, be on smaller spaces than on the forehead. Once you have established some sort of system of tonal relationship within your control your work will begin to acquire dignity and unity".

. . . . .

"Cut that word *imagination* out of your vocabulary for it is generally meant in a false sense. You will be told by some of these people who distort and manipulate the facts of appearances that they are indulging in an act of creation and that the artist working in a normal and impersonal way shows a lack of imagination. No such thing, for in the act of impersonal interpretation the highest form of imagination is necessary. For example the formulas which have to be used at the various stages have

to be visualised in action before they are revealed on the canvas and the most expeditious craftsman is he who by practice acquires the power of seeing in his mind's eye the effect of what does not as yet exist on his canvas. This is true imagination. People who talk about their imaginations ask you to accept without proof the idea that they possess rare qualities not given to the 'hoi-polloi' ".

. . . . .

"Sometimes you fail to do what you want to do because your definitions are false and sometimes you fail because you have not made paint do what you wanted it to do. Find out where you were amiss for it is just as useful to discover the exact cause of your failures as of your successes. To know definitely why you succeed or fail is the key to progress".

. . . . .

"Don't try consciously to be original. To do this is an admission that you are obsessed with a sense of inferiority which prompts you to assert yourself in a personal or caricatural way. The only way to be truly original is to try to forget yourself in the ardour of your work as an interpreter. Have a bit of faith in the originality of nature.; she never repeats herself and therefore if you can be humble enough to act as what is scoffingly called today a copyist you will be original without trying to be. Man makes conventions and gods to suit himself. Nature on the other hand has laws and her first proclamation is that no two things are ever alike".

CHAPTER VI.

Tools and Equipment

THE OBJECT OF THIS CHAPTER IS TO PROVIDE A PRACTICAL STARTING point for those who wish to take an active part in painting, instead of remaining content to enjoy it vicariously through the work of others.

The brief technical hints contained herein are not so much meant for those who wish to make a profession of painting but for others who are sufficiently interested in the theories and demonstrations discussed in previous chapters to make them eager to prove them in actual practice. Indeed, this is what we would recommend, for no theory of appearances can be said to be proved until it has been revealed pigmentally. Since the most important part of the painter's equipment is not so much *how to paint* but *what to paint,* we will content ourselves with describing the minimum but necessary tools required to make a proper start. The student is referred to more compendious treatises on the purely technical side as more information becomes necessary.

In order of importance the first thing wanted is a suitable place to work in. In this respect the writer and musician can much more easily obtain what they want. For them any comfortable and ordinarily well-lit room is sufficient; but the painter must be more exacting, for if his work is to be done properly and efficiently a particular form of lighting is necessary. Even when he has the ideal studio it will take him some considerable time to measure up its potentialities.

As the art of painting progressed the need for practical workshops and better tools became more and more pressing. The development of this art being dependent on an increasing knowledge of tonal, formal and chromatic relationships, painters were continually compelled to find new media, tools and better places to work in. This obliged them to maintain a lively interest in any other crafts and sciences from which they might obtain practical assistance.

A studio properly lit and equipped can be too small—never too large. A large studio allows work to be seen from a long distance from which, through the elimination of detail, the success

or failure of the formula in revealing fundamental characteristics of tone, form and colour can be judged more easily. The ideal studio should be higher than the average room — approximately thirty feet long by twenty feet broad and seventeen feet high. This permits of having a window placed high up, thus lighting the studio directly all over. If it is impossible to procure a workshop of these dimensions a smaller one will nevertheless serve the purpose, but in this case the size of the pictures attempted must diminish accordingly, since it has to be viewed from shorter focussing points. The orientation of the windows should be towards either the north or south, depending on the hemispherical location of the building. In the event of such a studio not being available the difficulty can be overcome by covering the window or windows of any large room and making use of electric light. The lamp should be placed in a large reflector to afford ample diffusion and attached to a high standard mounted on casters. A large mir-

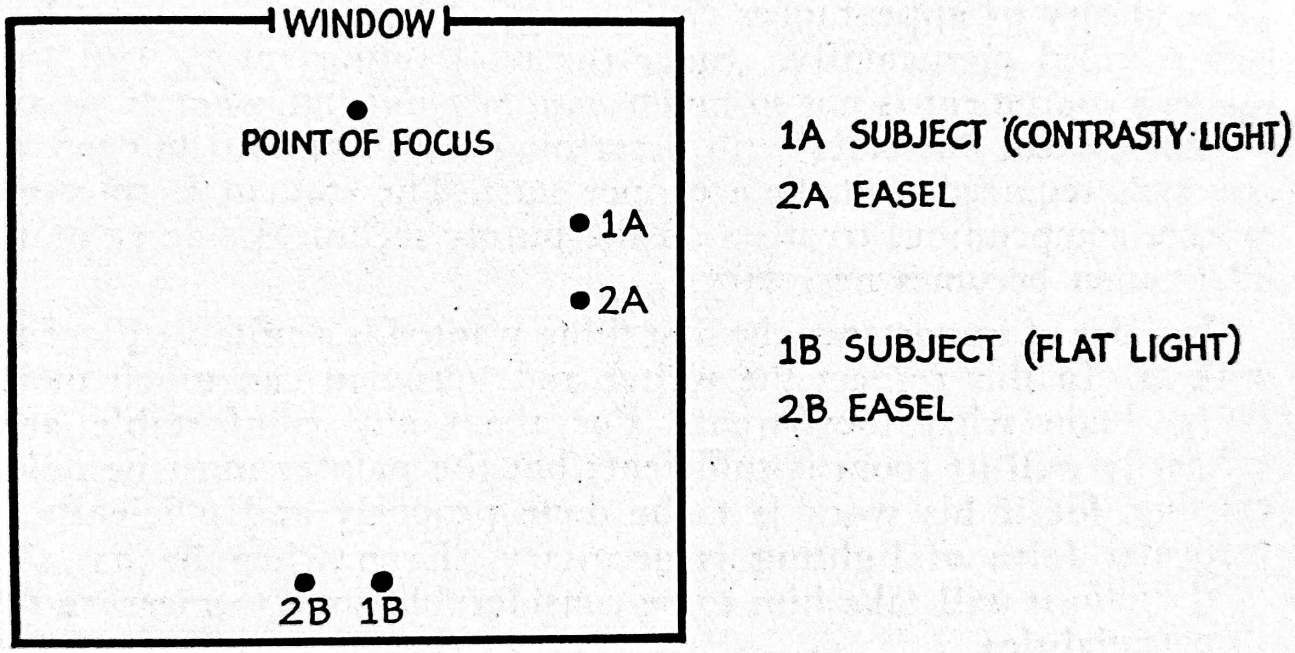


DIAGRAM 88, STUDIO.

ror will be found useful in many ways, more especially if the studio tends to be on the small side. In it the painting and subject-matter can be seen from a greater distance. In another way and for the same purpose the easel and mirror can be placed side by side and a subject arranged to reflect by the side of the easel thus giving a longer focussing point.

In diagram 88, above, the point of focus is shown near the window. Looking from it, objects placed at 1A will appear in a *contrasty* or *dramatic* light. The easel is placed in proximity to 1A the better

to allow a rapid comparison between painting and subject. Subject-matter placed at 1B seen from the same focusing point would appear in a *flatter* light, in which forms would be less dramatically marked.

The walls of the studio should be covered with a middle tone in a neutral tint with a matt surface. Very dark or light walls have the effect of "cutting-out" the outlines of objects seen against them and making a superabundance of harsh contrasts. Shiny walls are equally unsuitable (no matter how light or dark) because of the danger of reflections.

We will presume that the student proposes to use oil paint; for reasons already given this is the only medium for study purposes. Like other media it has its disadvantages. For instance, being a glossy medium, the picture in its inclination towards the observer may shine or reflect, thus falsifying the appearance of the actual tonal degrees. This makes it a matter of the utmost importance that a proper kind of easel be selected. Those suitable for a matt medium such as water-colour or pastel are quite useless for oil-painting. The easel for oil-painting must be made in such a way that it will permit the canvas (board) to be tilted forward so that it can be seen without reflections and allow the tones to be controlled accurately. Like the engineer's lathe, it is better that it should be too heavy than too light.

Next, the palette. This tool is simply a board on which the painter mixes his paints. It is to him as the violin to the violinist —an instrument to be taken care of in order to produce the finest results. Diagram 89, page 206, shows the most practical palette up to date. For very big pictures flat tables are sometimes used, but such "palettes" do not concern the beginner. It is a far cry from the palette illustrated to that the the Cro-Magnon painter who kept the few pigments he had in little pots and more than likely combined them on the surface of his painting to make the tones and tints desired. From this crude beginning to the palette illustrated here, many variations more or less practical have been used. In his celebrated "Maids of Honour," plate 10, page 242, Velasquez is seen reflected holding in his hand a small palette quite obviously not the most practical tool for use in mixing up large quantities to cover big spaces. Still more inefficient was Hogarth's palette—a shovel shaped piece of board with a handle. This clumsy tool completely monopolised one hand and must have obliged him to lay down his brushes to pick up the particular one he wished to use. Though clearly a less practical tool than the palette of Velasquez, its disadvantages did not prevent him from paint-

ing masterpieces since he had something to say and was resolved to say it whatever technical difficulties lay in the way. There is no doubt that if these painters had been given a modern palette to play on they would have made use of it with avidity—being practical men.

The palette should have a hard, smooth, polished surface, sympathetic to the touch of the brush. This can be produced easily. When cleaning it for the first few times a small quantity of the paint can be rubbed over the palette with a rag leaving enough to fill in the grain of the wood. The palette can then be left aside for a few days to dry thoroughly after which it can be dealt with in the same way. Three or four such treatments will finally produce a smooth surface. From this point the palette can be cleaned with a rag thoroughly each time, eventually producing through a course of time the smooth, polished surface desired. The tone left should be as near as possible the middle tone and of a nondescript tint. The

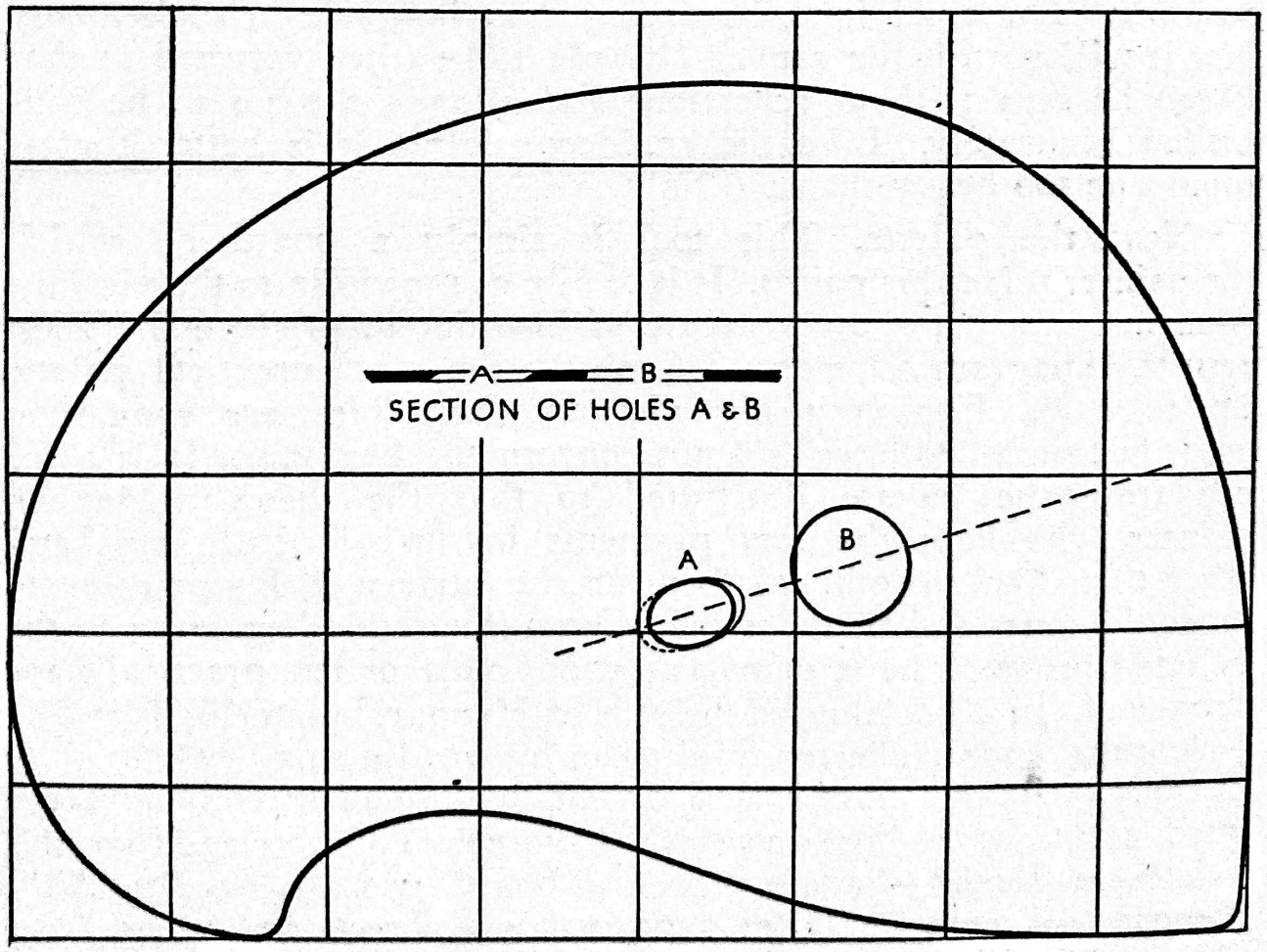


DIAGRAM 89. THE MELDRUM PALETTE.
(Designed 1913)

reason for maintaining a stable tonal and chromatic surface to work on is that the painter becomes accustomed to the tonal and chromatic idiosyncrasies of his palette enabling him to determine more quickly and definitely the exact nature of the tones and colours displayed on it. The palette should be as big as is convenient, for if it is too small the various tones and colours will become muddled and deliberate control of these factors will be frustrated. The most suitable material is light three-ply wood, because it can withstand usage and accidents better than a piece of straight-grained wood. The older palettes in straight-grained woods cracked easily and broke across the thumb-hole. From the plan given on the diagram a proper palette can be constructed. The student is strongly recommended to begin his art career with one of this kind. The breadth should be 26 inches.

The prevailing practice in most modern art schools of setting the palete mechanically with a stock set of colours without any reference to the subject is thoroughly unpractical. The recommended method of procedure is to consider the chromatic characteristics of the subject and lay the palette accordingly. It is better to start with too few colours than too many and if more are found absolutely necessary they can be added when required. The principle to follow is to choose the simplest set of colours possible which in their combinations will be sufficient. In this way the student will exploit better all the potentialities of his pigments progressively. For the beginner these statements on colour are not of immediate concern for if he is wise he will cut his teeth without the aid of colour, i.e., he will paint in monochrome (ivory black and flake white for preference) until he becomes adept enough in the handling of tone and form to warrant the complication of his problem by the addition of the third factor.

In many of the treatises on painting the placing and quantity of colours adopted by various artists is described at length. Few of these "palettes" agree and no valid reason is given for the variation. The student is warned against wasting his time in the consideration of these individual vagaries. Comparatively speaking, only a few colours are necessary and any addition to these will only serve to make more difficult a task already difficult enough. The following simple set of colours will be amply sufficient for most purposes: monastral or ultramarine blue, raw umber, burnt sienna, ivory black, flake white, yellow ochre, a suitable cadmium yellow, light red, indian red, vermilion or alizarin crimson. All of these colours are not always necessary, but the list is submitted to the

student for general use and whichever of them he chooses to put on his palette must be governed by the chromatic characteristics of his subject. They should be placed from left to right in the order as above, which ensures that the most used pigments are in the most convenient positions. In purchasing colours it is advisable to stick to the selected lists put out by established makers. These have been chosen and listed for their plastic qualities and permanence.

The next important tool is the brush. The most practical are those known as "filbert" and "round." These shapes are fully haired and hold a good quantity of pigment, permitting of more exact control of tonal degrees from the palette to the canvas, where the flatter form of brush is liable to produce tonal surprises when "brushed out." Flat brushes for some strange reason are much used nowadays, but their presence in a painter's equipment only points to the fact that he is not concerned with tonal accuracy and is content to let it come about by a muddling process of trial and error. Added to this the flat brush is apt to lead to monotonous brushmarks where the rounder and fuller bodied brush lends itself more readily to flexible handling. A varied assortment of sizes is necessary, to be used according to the size of the picture. In a large picture in which large areas have to be covered there is no virtue in applying fifty brushmarks where ten would produce the same result. Actually the experienced painter chooses his brushes as a carpenter chooses his chisels or nails—small ones for small jobs and large ones for large jobs.

It is generally understood that the good craftsman can be known immediately by the condition of his tools and this diagnosis is perhaps more true in the craft of painting than in any other. Unfortunately many modern students seem to have taken up the study of painting as an escape from responsible thought and careful habits. This state of mind manifests itself amongst other things in the untidy condition of their palettes and brushes. In the case of the latter the result is that they very soon wear out, lose their shapes and become unfit for service. The usual way of cleaning brushes is with soap and water, but this is not recommended because the caustic soda or potash contained in the soap has a corrosive effect on the bristles. A much better way is as follows: Dip the brush into any paint solvent such as kerosene, turpentine, etc., and work it between the thumb and fingers gently. Repeat this several times until it is clean to the ferule. A brush cleaner if not procurable, can be made by suspending a wire grill across a container such as a dipper or large jam tin; the grill is placed some three or four inches

from the bottom of the vessel. In use the container is filled with the solvent, the level of the fluid coming about an inch over the top of the grill. The brushes can be rubbed on the grill and the paint washed out will fall through and settle as a precipitate on the bottom of the container, thus clarifying the solvent for future use.

After the brush has been thoroughly cleaned it should be wiped with a rag and filled with some non-drying grease such as petroleum jelly. If this is worked well into the heel of the brush excellent protection is provided and it can be laid aside indefinitely for future use. When required the grease is easily squeezed out with a rag. Brushes treated in this way will not only last much longer, but remain more supple than those washed in soap and water.

Added to the colours on the palette the painter must have a dipper to contain a small quantity of raw linseed oil. Artist's colours are ground with just sufficient oil to make a glossy paste and are more or less fit for immediate use. Their viscosity, however, varies and the addition of a small quantity of the same kind of oil in which they are ground is sometimes necessary to render them more brushable. Care must be taken not to use too much oil, otherwise the paint will become sloppy and unmanageable.

Most paintboxes sold by artists' colourmen contain a bottle of linseed oil and one of turpentine. The use of turpentine, except to clean brushes, is to be avoided, for it tends to dry with a flat, mat surface. This is undesirable, for oil paint is a glossy medium with a longer extension of tonal range than matt media such as pastel and water colour.

The use of turpentine as a vehicle will tend to make a painting "dry out" in parts, leaving some areas flat and others glossy. If the matt parts happen to be on dark tones this "flattening out" effect will make the tone look lighter. To bring it back to its original condition, recourse is necessary to some type of retouching varnish. If, however, as it sometimes happens, the whole canvas has remained glossy, it will be sufficient to cover it with the *minimum* of linseed oil before repainting on it.

Retouching varnishes are simply solutions of gums in some quick drying solvent, generally alcohol. Applied to the picture they dry almost instantaneously leaving a thin, glossy surface which can be worked on almost immediately.

In practice the local colour of various objects is more or less difficult to procure and this is caused entirely by the variation of tonal degree in which pigments come out of the tube. For example,

let us suppose we have to paint an orange in a strong light in which light and shadow are far removed from each other in tonal extension. In this case the local colour of the orange (some kind of cadmium yellow) comes from the tube in a much higher tone than that required for the shadow. Now since the sense of colour on the orange is felt consistently from its darkest to its lightest parts the problem of obtaining this sense of chromatic unity becomes, in view of what has been said, purely technical. This being so the only way in which this chromatic sense of unity can be maintained is by having recourse to what we may call a *bridging-over* process. Some comparatively similar colour, or combinations of colour, coming from the tube as dark as that required for the shadow parts can be used to give approximately the sense of chromatic unity always found in natural objects. This example means that under certain conditions cadmium yellow is a difficult pigment to handle. All others coming from the tubes in very light tones are for the same reason, difficult pigments. Consider now the reason why certain colours are easy to handle. Specifically, an article coloured in a cool grey, of the sort that can be made with ivory black pitched in a higher tone, presents no chromatic difficulty for the continuity of colour can be produced automatically from pure white to pure black. In the same way this continuity of colour in the full tonal range necessary is easily procurable in other dark pigments such as burnt sienna and raw umber. Practically, if the painter could dispose of a set of pigments as dark as raw umber, burnt sienna or black, which would give the colour qualities of cadmium and the other light pigments when pitched in the same tonal degree all colours would be equally easy or difficult to manage. Whether chemists will ever be able to furnish the painter with this ideal palette remains to be seen and in the meantime the only resource is to make a clever use of the bridging process described. As we have said the progress of the art of painting moves in step with other forms of knowledge. The great craftsmen of each period have always welcomed any aid, mechanical or otherwise, which would help in the revelation of their knowledge of the orders, degrees and qualities of reticular impressions, and this state of practical open-mindedness has always marked them in contrast to the conservative hesitations of their less significant contemporaries.

Canvas as a surface to work on is now obsolete, or should be. In the early days painters worked on wood panels, buttressed and criss-crossed with reinforcements on the back in order to keep them flat and stop them from splitting. In spite of all the care taken many

of them did split sooner or later with disastrous effects on the picture. To overcome these possible accidents some unknown inventor conceived the idea of stretching a piece of prepared canvas over a *stretcher;* this abolished the splitting evil, but the advantages gained did not offset the disadvantages of the prepared wood panel.

In the first place the back of a canvas is continually exposed to the air and since it is primed with an organic material, glue, is liable under humid conditions to develop a mould which often appears on the surface of the painting. Secondly, a solid unyielding surface is much better to work on, and thirdly, although all paintings on solid surfaces or canvas are liable to show cracking in the course of time, a special kind of crack is added to those which develop on unyielding surfaces. The reason for this is that after a few years oil paint becomes exceedingly brittle, in which condition it will break and crack at any movement. The continual movement of the canvas after this has occurred allows dust and dirt to accumulate, causing parts of the painting to flake off. With these facts under consideration and in view of the wealth of new materials which we now possess it is easy to find better materials to work on. The best of these for the purpose are composed of shredded or exploded wood made into flat sheets under enormous pressure. Unlike wood they are not liable to warp if protected on both sides from humidity. Prepared on both sides to make them impervious to moisture and with a thin coat of wax on the surface of the painting these pictures will undoubtedly outlast by centuries paintings done on panels or canvases. The material referred to is marketed under the trade name of "Masonite."

. . . . .

Lesson Note:

"How eager people are to ascribe success to something other than diligent study and hard work! How many like to think that the quality of a Stradivarius violin is due to a particular varnish, the recipe of which has been lost, instead of to the loving craftsmanship of the workman who made it. Again do we hear other impractical romanticists speak of the making of Toledo steel as a lost secret whereas by the aid of the science of metallurgy as it exists today it and many other qualities of steel have been invented. In the world of painting special varnishes, pigments and materials of all sorts supposedly unknown today are held by romantic theorists to be the cause of certain qualities seen in many great artists' work. I remember a pupil of mine who started to make a copy of a picture in the Louvre. He had not gone very far in his work before some of the copyists usually found there became interested in what he was doing. One of them asked how he made his picture look so old, to which he replied that he just painted what he saw. His enquirer left him dissatisfied, for being of the romantic sort that never make great artists or good craftsmen he had expected to be told that it was due to the use of some particular paint medium or varnish. Later on my pupil learnt indirectly that this dis-

satisfied enquirer had spread about the rumour that the young painter in whose work they had been interested had discovered *the secret* of Rembrandt's colour. The world is full of impractical sentimentalists who have been conditioned to prefer mysteries to simple facts. Don't you be one of them if you want to paint. Work for knowledge and if you learn a lot and become a master yourself succeeding generations of sentimentalists will in turn ascribe your simple practical thoughts and technical methods to what Constable called 'fal-de-lal and fiddle-de-de.'"

APPENDIX.

Lectures

MY OBJECT IN GIVING THESE LECTURES HAS BEEN SUCCINCTLY expressed by John Constable in his first lecture.

"I am here on behalf of my own profession and I trust it is with no intrusive spirit that I now stand before you, but I am anxious that the world should be inclined to look to painters for information on painting. I hope to show that ours is a regularly taught profession; that it is scientific as well as poetic; that imagination never did and never can produce works that are to stand by comparison with realities."

As a result of much false propaganda put forward by financially interested picture dealers and subsidized art critics aided by efficient means of publication—means which did not exist in the time of Constable—his injunctions are more than ever necessary. Due to the machinations of these materially interested picture merchants the people of to-day are dazed, bullied and have no longer the courage to trust to their own impressions about an art which should be spontaneously intelligible. We must cease to consider individual works of art as sporadic happenings; we must consider that the art of depiction is the visible form of a particular kind of knowledge in which a gradual development is noticeable. We must therefore examine this process of development in chronological order.

. . . . .

Because of the mysterious and puzzling art propaganda of these times the modern art student generally begins his studies in a more or less blind manner; the very subject he is about to study is perhaps the one thing on which he has no definite general ideas. A student of chemistry knows at least what his particular science treats of before commencing his studies, whereas an art student if suddenly asked to give some definite idea of the functions of his art, shows by hesitating and vague answers that he has given this important matter little thought.

Of all the faculties, sight has been the last to develop, and the comparatively recent evolution of this organ may be a reason for the state of confusion existing around the true theory of painting

at a time when musicians and writers are able to discuss their respective arts from some accepted basis.

Before any widespread advance can be made in the craft and appreciation of painting, the student and general public alike must make a serious endeavour to consider this subject in a more responsible way; for as long as they remain unaware of the true nature of painting they can neither produce nor criticise sanely for the lack of a rational foundation.

The fundamental basis of any art is expressed in the dictum, **all great art is a return to nature;** this truth is the accepted gospel of all the significant art-craftsmen and art-philosophers, past and present.

Art is a religion; the universe is its cathedral and its creed is the humble and sublime one of all true artists and scientists whose only faith is based on demonstrable theories. Such has been the belief of all men upon whose honest work great cultures have been built; men who have been content to face their own limitations that they might produce something of benefit to themselves and to others. Their aims have always been characterized by a great humility which compelled them to work within their reasoned definitions and the limitations of their media of expression. Phidias on the evidence of his work, must have been as humble as Sir Isaac Newton and Corot must have been as unpretentious as Charles Darwin. Corot said he was content to consider an afternoon well filled if he could return home with a definite idea of three generalized tones running throughout the landscape he had been studying. This patient observation and analysis, this humility of aim, made him as great a scientist as Darwin, who, on the other hand was in his own science as great an artist. Unfortunately, in this religion as in others, we are confronted with the difficulty of reconciling the inspired word with the various and contradictory interpretations of the Pharisees.

Much has been said and many mystifying treatises have been written on painting, the sole result of which has been to leave people in a state of much confusion with little or no rational basis from which to start. So much is this so, that it can only be taken as a very hopeful sign if any real interest in this art still survives. The artists themselves have been partly responsible for this confusion. More widespread interest in the arts has been taken by the public than most of them have to date recognized and if anything can be done to show more clearly the qualities which we must expect to find in

good pictures and sculpture (the factors which cause one work of art to be so very much more significant than another) it will only be possible through a more direct appeal to the eye and brain.

In the investigation which we now undertake we shall compare all statements made in relation to works of art which have stood the test of time. By this process of comparison the truths which they have in common will be readily seen and understood. We shall find that they are those which have been chosen by posterity as essential factors. In this context this judgment of posterity is the summing up of the criticism of painters who were capable of demonstrating the reasons for their likes and dislikes; in other terms, the deductions which will be made from these time-proved pictures could be called the sum of the analysis of nature as seen by the eye and as painted by the world's greatest artists. They are deductions which inevitably give a definite idea of the constitution of an artistic achievement.

Work which has stood the ordeal of time, examined in chronological order, demonstrates that the art of painting is a pure science (the science of appearances) and considered as such we must therefore assume its impersonality with that of any other science. The study of appearances will show how the great masters have understood *the law of the return to nature,* and that this return to nature means *the translation of ocular impressions within the limitations of a medium and in the perceptual order in which these impressions are defined by the brain.*

Great painters such as Leonardo da Vinci, Velasquez, Rembrandt, Titian, Raeburn, Corot, Constable and Millet have achieved their results by following instinctively the natural theory of visual perception, but, due to the state of science in their days, they have not, with few exceptions, succeeded in explaining their ideas and working principles verbally. Up till now the methods employed by these and other great masters have been misinterpreted and formulated by non-practising theorists who have taken great pains to construct plausible theories which do not work out in practice. Art expounders of this type were not fully equipped to deal responsibly with such an important subject and the unpractical statements and contradictions which litter their treatises have been a source of dismay, tempered with amusement, to serious painters. It is surely not too much to ask that since we look to the practical engineer or mathematician for valid knowledge in their particular fields of effort that we should also develop the habit of consulting the painter in his particular region.

Besides their legacy of pictures, some of the great painters have found time to describe the technical and mental methods by which they obtained their results. In these cases the double aid of painting and verbal statements provide a key to the understanding of their art principles and methods—in a way comparable to the discovery of the Rosetta Stone in the field of Egyptology. Unfortunately, although artists so endowed were few and far between, it is reasonable to suppose that had they all been able to leave their pictures accompanied by written descriptions of their methods of thinking the assistance of these two guides would have formed stepping stones to a more advanced and rational appreciation of art. But science is cumulative; inevitably we are approaching a time when the consideration of aesthetic problems will be possible from an accepted basis. From this point there is no doubt that great and continuous results will follow.

. . . . .

That the great painting of each particular era has been so slowly assimilated and appreciated has been due to the want of a cultured connection between the organ of sight and the brain. The qualities of a painting are proved by the eye (we read a book, we listen to a piece of music but we *look* at a picture). This process of cultivation can only proceed for as long as we are sensorially and mentally interested in the art. No mean task this; one which can only be apprehended fully by those of us who are craftsmen and who understand the amount of labour and thought which this study entails.

. . . . .

It is often said that being given a pair of eyes, the lay-man must therefore *know* what he sees as well as the most capable artist. This is an unconscious error and it is the duty of the artist to demonstrate the falsity of what appears to be an axiomatic statement. The truth is that the eye is generally used for some ulterior objective—in most cases a practical or literary one.

The detective recognises the criminal by small details such as finger-prints, wounds, birth or tattoo marks; the animal breeder appraises his stock from isolated characteristics—characteristics of which the non-initiated is unaware. Consider the ulterior approach to a book of four people with different "ocular interests": the general reader's concern is with the letter, the word, the chapter; the printer's, with the typeface, the justification of a line of type, the layout of the pages; the paper-maker's with the weight, texture,

and the classification of the papers upon which the book is printed; the bookbinder's with the kind of book-cloth, decoration and method of binding. Each has his own particular ulterior use for the eye and insofar as he makes the observations referred to above, or for that matter any other singular observation, he is making use of the eye with an ulterior objective by the pursuance of a chain of observations with a singular and restricted aim. This use of the eye for some "subjective objective" is very extensive in ordinary life—so much so that it could be said the human eye is generally used in this way.

Diametrically opposed to this ulterior purpose, the painter concerns himself with *all* the impressions and in the scientific analysis of them he learns that they are perceived in a definable order. Further to this he also learns that he can only proceed in his investigations insofar as he can define visual phenomena in perceptual order. He achieves his results as a builder erects a house: from the foundations to the finer degrees of finish—the varnishing of the woodwork, the texturing of the walls. In this analogy the foundations of the painter's construction are simply the most easily seen visual impressions—the most easily seen visual impressions are, incidentally, the easiest to define. The untrained brain of the student painter is unduly interested in small details. The bigger and more elementary impressions have passed too quickly, too quickly to permit of mental definition (i.e. perception). Think of a clump of trees against the setting sun. In an elementary impression this view is defined by the brain as two masses of tone, light and dark, expressing certain shapes. Immediately following this first perception the brain begins to determine small sub-divisions in these two elements which convey ideas of clouds in the sky, boughs, leaves and other minor details within the trees.

Sluggishness of observation (definition being only possible when the mind arrives at small details) is discernible in the work of all artists, even the greatest, though in the latter case this lack of mental alertness disappears progressively. The invariable evolution in the advance of depictive science has always been in one direction—from the recording of detailed late impressions to the broader and more elementary ones. The development of the art of painting is the development of the science of visual phenomena—the ability to analyse and define the quality and order of the visual impressions.

It is an accepted axiom that being given an intense desire to express oneself the means of expression will be found almost unconsciously and in nothing is this more true than in the art of paint-

ing. The real work of an art instructor, therefore, lies chiefly in the endeavour to show his pupils the scientific order of visual impressions. The majority of masters teach not how to observe, but how to paint, and under such a system the pupils' works become as though done by one and the same hand. If, however, they are taught not mere technical tricks but the art of observing, they will find unconsciously (in the heat of their desire to achieve) the most practical method of interpreting what they have seen. This approach develops the technique seen in the work of the great masters, work which makes us feel that these men had more or less unconsciously adopted any method which revealed their mental definitions and which they might become aware of only after the work was completed. In the practice of painting, manual dexterity counts for little or nothing. It is dexterity of the brain which produces the great artist, for although a teacher can impart certain technical knowledge that is the easy part of a painter's equipment; it is elementary and would not be a stumbling block even to the most inept student.

"There is only production where there is expression. Woe to the artist who shows his talent rather than his picture! It would be laughable indeed if the wrist were to take the first place. The hand is the very humble servant of the thought. The point is not to seek a factitious originality or a personal technique. The point is to think justly."—Jean Francois Millet.

. . . . .

Great art is marked by the humility of its aim—a quality less evident in counterfeit, applied or commercialized art forms. It conveys to us the humble pretensions of the executant resigned to work within limitations—limitations imposed upon him by his own finite power in the depiction of visual impressions in their order and by the potentialities of the medium. Humility of aim is the light and easily carried baggage which permits us to travel far into the world of appearances. In that realm as John Constable has said "No arrogant man was ever permitted to see nature in all her beauty."

. . . . .

To accept modern art criticism would be to accept the unscientific statement that no two of us see relatively alike, that we all possess what may be called "individual sight." This error has been propagated largely by artists themselves and is open to the suspicion that it is meant to cloak their inability to interpret nature in

a manner readily comprehensible to the normal eye. It would be unscientific to accept the varied results which artists obtain as proofs that we all see differently, rather would these variants (some of which in these times are incomprehensible) tend to demonstrate that no two artists are on the same plane of knowledge and ability. Further, it is as amply demonstrated that according to the degree of the success of the artist's interpretation of natural visual phenomena, any part of his work not so based is his own personal expression—a poor substitute for nature's wonderful story.

Constable was of the opinion that *personal expression* was merely a sign of human limitations. We must agree with this for if great art is international and universal, it is clear that individual ideas would only take it from its high place and reduce it to a lower level. This self-centred point of focus is seen in all mediocre forms of art, disappearing progressively as we mount the heights of depictive achievement.

. . . . .

Few of us are skilled enough to differentiate between the works of great painters except through literary subject-matter. To distinguish a picture by the pure art qualities which it contains is the *sine qua non* of appreciation, for it is this criterion alone which has finally placed the art of the past in varying degrees of significance.

In dealing with this difference between the trained and untrained brain in the consideration of visual phenomena it must be clearly understood that there is no question raised here on the ability of the untrained eye to receive impressions. The point being stressed is that for those who are not craftsmen it is impossible to define the rhythm and order of ocular sensa. This is the science of the painter and we are painters just as far as we can define with accuracy the order and quality of our ocular impressions. This restriction in no way excludes the layman from the appreciation of the artist's work for were this so art would cease to be an international language; it only limits his ability to judge rightly and justly the theories and methods employed in its execution.

. . . . .

The task of demonstrating ocular impressions by any of the spoken languages is almost insuperable. Adequate demonstrations can only be made through the use of a medium such as oil paint, for

just as it is impossible to convey an idea of the grandeur of Beethoven's music by words alone, so are they equally inadequate in the description of ocular sensations. Paint is the medium by which the painter expresses formulas in the science of appearances, and words in themselves cannot tell the story which only paint can tell. It is this unique story unalloyed by foreign elements which can be called the pure art of painting.

Nevertheless, verbal explanations in relation to something seen (such as the consideration of a picture) are of great value in furthering the appreciation and understanding of painting. All the more insofar as we take care to hold terms to an exact use. For instance, the world *tone* (sometimes *tone-values, values*), has been much used by artists, art-critics and art-connoisseurs, in spite of which its exact meaning has not been established. The terms *form* and *colour* have been used in an equally inaccurate way.

. . . . .

Tone is the intensity or depth of any pigment. It is the *chiaroscuro* of the Italians and the *clair-obscur* of the French. These words explain their meaning literally, *"light-dark."* All the pigments employed by the artist, whatever be their *chromatic values,* can be pitched in higher or lower degrees of lightness or darkness between the darkest pigment (ivory black) and the lightest pigment (carbonate of lead). As we know, four notes of music can be played in exact tonal relationships in different keys and this can also be done within the tonal gamut employed in depictive media, the darkest pigment (black) in the bass and the lightest pigment (white) in the alto. Of all the media employed by the painter, oil paint possesses the greatest range. Being more extensive than the range employed by the photographer it follows that in tone alone (that is, in monochrome) the painter is called upon to produce more than the camera. The tones in nature can, of course, be split up infinitely, this splitting-up process being purely dependent upon the degree of observation. All paintings must contain some definite formula of tone because it is utterly impossible to control all the tones which the eye can distinguish. The works of art regarded as scientifically valid (the pictures of the great masters) have consisted of a grouping of the infinity of tones found in nature's schemes into a few carefully generalized tonal relationships. In work in which the painter has succeeded in doing this there is no evidence of

any attempt to define more than the medium or human limitations allowed.

The evidence contained in all significant works of depiction shows clearly that their authors did not attempt to do much, but at the same time while we appreciate the humility of aim it is equally clear that they are scientifically correct in giving always a sense of completeness within the limitations of the painter's objective.

Tonal formulas can be noted distinctly in all significant works of art, but they are stated with such accuracy of relationship that the methods of the artist are submerged in the realization of the impression which he intended to convey. To the true artist, methods and theories are only means to an end; his constructive desire—however he may make his results—is to produce *the art which conceals art.* Of the factors which concern the painter, tone is the most difficult to define and manage, and since the greater difficulty always includes the lesser, artists such as Constable, Corot, Velasquez, Raeburn and Rembrandt, etc.,—*the "tonal" artists*—have been at the same time consummate draughtsmen and splendid colourists. Tone is the sole factor responsible for the illusion of space, light and shade, which we sense from a flat surface. In any illusion of space and distance, according to the subject-matter, we may perceive various solid objects catching the light on different angles and curves around their volumes. The perception of angles and curves is referred to technically by the word "planes." Planes are derivatives of correct tonal-relationships; as such they do not affect the technical methods of the painter. His concern is with the evaluation of tonal-relationships knowing that these, if correctly stated, will automatically excite the sensation of planes.

As an example of the particular function of tone we note that an illusion of space and distance may be felt from a monochrome as if the proper colours for each part of the picture had been used (reference to the plates in monochrome in this book will demonstrate this statement.) This being noted we are aware that chromatic relationships play no part in three-dimensional sensations. Painters choose almost by instinct and without much effort a pink for flesh and a green for grass, but require more ability to define the relationships of tone which put each part of the picture in its correct spatial position.

Correct tonal relationship is the last of the factors of painting

to come to perfection. All periods of renaissance have been characterized by an increasing interest in tonal values, whereas periods of decadence have been marked by the return to the more elementary condition which might be called "atonalism". This symptom of depictive reaction has been noted and deplored by many great artists. Amongst others, Rodin, speaking of modern times, voiced his opinion in these definite terms: "The science of planes is common to all great art epochs; it is almost ignored today."

Form is the superficial area, its shape, its placing and its relationship with other forms in the particular problem. It is created by the apposition of a lighter tone against a darker tone. The frontier line between two tones forms a track along which the eye is led automatically. In this way form can be considered either as a tonal extension or as an ocular track.

An ocular track as defined by a conventional line is a pure abstraction, in itself incapable of giving the sensation of shapes and proportions in their spatial values. A linear diagram of a room with objects such as chairs and tables in it does not give to the eye an automatic illusion of space. To arrive at this result the different spaces made by these lines require to be filled by tones. These tones, if properly related, will give the desired illusion without any necessity for mental translation. An abstract form may in a measure be likened to the latent image on an exposed photographic plate which becomes visible when developed, by the addition of lights and darks (tones). From the linear diagram of the room in question we might persuade ourselves that we actually see a room, but the point at issue is that this idea has been arrived at by a process of translation and deduction and not through spontaneous sensations of reality. Knowing what the artist has wished to represent by his lines we have unconsciously translated them into what is generally understood as a "mental image" (a mental image is of little practical use to a painter). Many artists have attained a special reputation on their ability as draughtsmen but in the work in which they employed *tone* in addition to *form,* it is all too obvious that they only succeeded in giving inaccurate impressions of the qualities of space and volume. This lack is not found in the work of the greater artists, the painters interested primarily in tone, for in their paintings the illusion exists in reality.

It is a visual fact that a given superficial area can be made to look larger or smaller according to the tone with which it is filled or surrounded. It is for this reason that no method exists whereby

the eye can accurately appreciate abstract forms divorced from tonal relationships. Corot expresses this difficulty in saying "Form and tone values are the great qualities in painting." It may be added also that tone and form cannot be dissociated for there is no other way of creating sensations of form other than by the apposition of two tones. Tone and form are like the two crutches used by a cripple. One goes in advance to be followed immediately by the other; just as one crutch alone will not support the cripple both tone and form are necessary to reveal the complete illusion. In all convincing work we see these two factors moving hand in hand and the satisfying impression which we derive from this balanced progression is due to the fact that the artist has applied an equal amount of thought and observation to them.

It is this state of depictive equilibrium which gives what is felt to be a "perfect work of art" and as such does not depend on the actual amount of "finish" evidenced in a picture.

. . . . .

Colour is the third and least important factor in depictive art—an added grace to tone and form. Like the instruments in an orchestra it introduces chromatic varieties on a tonal scheme and in itself has a very limited mental interest.

It has been said that great activity in art has always ushered in periods of social decadence, and this theory has been accepted as irrefutable. Surely this hypothesis is a complete transvaluation of the influence of art in any civilization. It is true that many artists have too often catered to the debased tastes of their patrons, but on the other hand the true artists of each period maintained their standards more than often at the price of suffering and neglect; they were always a negligible minority in any civilization—so negligible indeed that they could not hope to do much to change the decadent and artistic fashions of the period, fashions which unscrupulous artists accepted to please the self-elected connoisseurs. We may say truly that decadent civilizations produced a decadent form of art. Therefore: *decadent civilization*—decadent art; *virile, sane civilization*—virile, sane art.

Periods of decadence have always been marked by a redundance of meaningless and tiresome decorations, abstractions, symbols, and above all garish and primitive colouring.

Unfortunately, all present indications point to the conclusion that we are passing through another aesthetic decline. Specialization has rendered us fatally dependent upon one another, with the result that outside of our own particular fields of endeavour we buy our necessities, mental and material, ready made. Thus we buy amusement and when we have paid the price, we expect to feel amused. We condemn any art which does not titillate our senses without effort—because we have paid the price. Under the spur of necessity the artist has been obliged to cater to these demands with the result that the walls of our art galleries are covered with vulgar and inept displays of dead pigment; the painter who can readily captivate superficial minds by some elementary display of colour is acclaimed the greatest artist.

Art is eternal. What is called the art impulse is an organic instinct. If we throw a bone to a dog on a gravel path and a lawn is nearby he will take it on to the grass because he wishes to eat the bone under the best possible conditions. In acting in this way he is manifesting this impulse. But all human beings are in varying degrees artists and if during periods of human decadence the immortality of art seems in question it is only superficially apparent.

In such periods art is like the seed which preserves its fecundity quiescent, blossoming forth immediately under fertile conditions. These conditions are not the conditions imposed by a civilization in a decadent state, but conditions which are part of a civilization in a state of healthy physical and mental vigour.

There is no surer index of the mental and moral condition of a civilization than the state of its art. No civilization can endure indefinitely except in accordance with natural laws, and the state of art has always signalized, first and foremost, the dissolution of this partnership.

From this point (the infallible danger signal) it is only a short step to decay and corruption.

Although we have spoken of colour as an added grace it would be quite incorrect to say that the masters ignored or disdained this embellishment since their works show a highly sensitive understanding and appreciation of it in *its true relation to tone and form*. These men understood that colour relations are perceptually defined by the eye in a certain order and their obvious aim has been the postulation of tonal, formal and chromatic impressions in the fixed order of perceptual importance. So it follows that great painting reveals the

most balanced relationship of the three factors (tone, form and colour) and it is quite out of date to consider one artist as a great draughtsman, and another as a great colourist. When a painter uses monochrome his work consists solely of tonal and formal relationships, but as soon as he adds the third factor, colour, it must be introduced in its relative order of ocular importance. To neglect this is to create the feeling that some omission, hiatus or fault has crept in to destroy the natural sense of unity and balance always existent in natural visual phenomena.

The precise analysis of any part of nature will show tonal, formal and chromatic values in a certain order of ocular importance. These must be noted, defined and transcribed in the same order that one may perceive therefrom the scene or subject which the artist had in front of him. When any one factor lags behind, the natural sequence of ocular impressions is abruptly broken and from this stage the work ceases to be an apparent reality.

. . . . .

Let us now examine a reproduction of one of the world's greatest paintings, "The Tapestry Weavers," by Velasquez, plate 1, page 231.

By a flight of the imagination let us suppose that we are in the Prado, Madrid. The picture is in front of us. If we look at it in a perfectly relaxed condition we shall suddenly feel a larger space before us. By what appears to be a miracle the picture has added its own space and atmosphere to that in which it is placed. We do not think of fine colour. We do not think of flaunting technique or masterly draughtsmanship.

We feel something much finer—reality itself. The world has become younger and we are transported as on a magic carpet to the Spain of Philip IV. Unthinkingly, we shift our focussing point and are startled to find that this reality is a fixed one.

We are back once more at where we started; it is a picture, a flat surface covered by tones on certain areas and in certain colours, but something has made us aware that we have been observing a wonderful work of art.

Such are the emotions created by great art and such sensations can only derive from the translation of visual phenomena. As already stated, one of the primary principles governing appear-

ances is that our ocular perceptions come in a certain order. That being so, there is no such enigma as a great colourist or draughtsman. We are artists in the varying degrees of our knowledge of natural visual phenomena. Velasquez could not have tricked us into the belief that his canvas was reality had he transgressed any physical law. His place in art is the inevitable consequence of his science in the recording of tonal, formal and chromatic relationships.

Particularly in these days it must be insisted on that colour is the least important factor in the construction of the illusion of reality upon a flat surface. While speaking of this factor it must be emphasized that it is considered in its strict sense, as distinct from tone and form—as a thing in itself.

The extremes of sensation which we derive from colour can be described as relative degrees of warmness and coldness. In any proposition (considered chromatically) which the painter desires to resolve, his particular problem presents to him these two qualities in a more or less extensive range. Intermediate grades of coldness or warmness can be discerned taking relative positions between the two extremes. The pigments at the disposal of the painter come out of colour tubes in varying tones, e.g., yellow-ochre is pitched in a higher tone than ultramarine blue, and these tonal differences constitute a technical problem for the artist.

Chromatic relationships, like tonal, are only measurable within the range of human discernment. We have already noted that with degrees of lightness or darkness (tone) the power of the human brain to discern differences of intonation ceases at a certain point and that tonal relationships are the most clearly discernible towards the middle of this range. Chromatic sensations follow the same rule, for whatever colour the artist may use his power of appreciation ceases at the point where they only convey to him sensations of lightness and darkness. Like tonal relations these chromatic sensations are the most easily defined in or near the middle register. Each pigment gives its richest impression of colour in certain tones, which explains why painters are limited as to the number of colour definitions which can be translated distinctly enough to be recorded as separate distinctions.

The appeal of colour to the eye is the most elementary one, crude, raw colour appeals more quickly to primitive minds than more neutral tints, which please only the more highly evolved beings. A

baby will automatically choose the gaudier of two toys, and a savage will in the same way select the more brilliant of two sets of glass beads.

. . . . .

An invariable evolution occurs in ocular perception from the unsophisticated child to the sophisticated painter. To visualise this statement, let us consider a specific example of juvenile expression. Take as an example the well-known house (a favourite subject with children) with its precipitous and symmetrically laid out garden and its rectangular and well-balanced facade. What do we find?

It would appear that the young artist has portrayed an effect in winter-time. Firewood and coal must be cheap and the family must be very cosy, for we see dense clouds of smoke issuing from every chimney. All very elementary, but pure and charming. Analysing further the little picture we find that the author has been primarily interested in colour and literary details. He knew that grass was green and bricks were red and to be on the safe side has chosen the most violent green and red in his colour box. Not for worlds would he attenuate these colours, for, being a child, he tells his story in a forthright way. Up to this point there is nothing to be said, he has chosen the right colour and any criticism so far is a matter of degree. His definitions of form show evidence of some study, though not wanting in grave faults; the chimneys are out of proportion to the house and the man climbing up the garden path would certainly find it difficult to squeeze through the doorway. These inaccuracies stamp the effort as the work of a little child. Nevertheless certain formal values have been vaguely reasoned out and once again criticism of them is only a matter of degree. As for tonal relationships, we find that the child has remained absolutely unconscious of the existence of this most important factor. He is still living in the primary world of shapes and colours, the unmistakable mark of visual immaturity. Due to ignorance of tonal relationships the front walk and the garden appear to climb up the surface of the picture, forming a continuation of the vertical facade, everything lying on the surface of his paper.

Little has been explained by tone and if the painting has conveyed some knowledge of its literary subject-matter this has been done mainly through definitions of colour and form.

Therefore, our analysis of the youngster's conscious effort can be summed up in this approximate formula: Colour, 77 per cent.; Form, 20 per cent.; Tone, 3 per cent., these factors having been considered in the relative degree of their ease of recognition and not in their degrees of depictive value. From the child to the Velasquez through all stages of visual knowledge we see clearly this same ease and difficulty in the evaluation of the factors which form the trinity of the painter's art.

Velasquez on the evidence of his work recognized the existence of the three factors, but his practical experience in handling them had taught him that it was comparatively easy to manipulate formal and chromatic relationships and exceedingly difficult to handle tonal relationships. Thus, practically his main effort consisted in the acquirement of the exact knowledge of tonal relationships. Having surmounted the greater problems involved in the definitions of exact tonal relationships, colour and form presented no difficulties to him. From the child to the master and without exceptions we find that these difficulties have remained in the same ratio. The child has started in ignorance of the existence of tone and the master has finished his career with the conviction of its elusiveness and capital importance.

Painters who pride themselves on the mastery of colour and waste much attention on this factor must be classed as immature thinkers in the science of depiction.

It is sometimes said that reasons cannot be given to explain why we feel certain colour relationships to be harmonious or discordant, and because no satisfactory explanations have been given it has generally been taken for granted that we must abandon all research in this direction as useless. It cannot be repeated too often that the production of the sensation of reality on a flat surface is dependent entirely on an understanding of the natural laws underlying appearances. Purely physical theories of colour tend to lead us away from the world of sensation from which the painter must always start. His work is contained in the pigmental demonstration of sensations which we call arbitrarily, tone, form and colour. Colour as one of the necessary factors must therefore be explicable in its relation to ocular behaviour and to abandon all investigation on this point is to surrender our reason. Though there are many scientific text-books which treat of the physical nature of colour, the knowledge which they impart is of little assistance in the problems of the painter.

The job of the artist lies entirely in the region of visual sensation. Outside of his knowledge of appearances nothing can help him. He need not know anything about the science of physiology, the structure of the eye holds no directly useful place in his special equipment. On the other hand the physiologist may know all that is known about the structure of the organ of sight without knowing more than the average person about the actual behaviour of this wonderful piece of machinery. The study of anatomy which was for so long considered necessary and which distorted the natural ocular impressions of painters is a notable example of a futile approach to the science of appearances.

The objective of the painter does not impose on him any obligation to explain *why* the eye receives impressions of tone, form and colour; his work lies entirely in the analysis of the nature, order and pigmental demonstration of these sensations as received. This being so, facts not proved by the eye have no connection with painting. It is quite useless to know the anatomical structure if we are painting a fat pig in which little "anatomy" is visible, and when we are taught that Sirius is larger than the Moon we accept the knowledge as an astronomical fact with no clear relation to the facts of appearances. The interference of other sciences having an apparent connecting point with ocular impressions has led to many strange developments in art which for the most part were soon discarded as they were found to have little to do with ocular behaviour. One such sterile experiment is illustrated in the pictures of that earnest, but unscientific, group of painters known as "Impressionists" (Monet, Pisarro, Sisley, etc.).

These men based their experiments on the scientific fact that in the world of appearances the physical union of colour sensations did not necessarily coincide with the sensations derived from various combinations of actual pigment. The words "physical-union" are to be understood in this sense: on a specially constructed top, a disc divided in equal parts of yellow and blue is placed. The top is then set in motion with the result that we see a colour of an undetermined grey instead of a green, as would happen if blue and yellow had been mixed together. The words "physical-union" are therefore used here to describe the result obtained from the spinning top. This clearly does not in any way help the painter, since when he mixes blue and yellow pigment his mixture conveys indubitably the sense of green. In adopting this purely physical theory these artists hoped to attain a greater brilliancy of colour than is to be found in

the works of the past, but the results which they obtained did not bear out their hopes.

This instance is only one of the many misguided attempts of abstract theorists in the realm of practical application to needlessly complicate the art of painting. The work of the "Impressionists" bears the imprint of certain quasi-scientific theories and certainly does not indicate evidence of any knowledge of appearances unknown to Velasquez or even for that matter, to Van Eyck.

Practical experiments demonstrate that beauty of colour is entirely dependent on tonal relationship in the order of natural schemes. "Quality" of paint is produced by correct relationships of tone. Thus, if a monochrome reveals three-dimensional sensations it is because the tonal relationships contained in it are in accordance with the natural laws of light phenomena. As an experiment to test the truth of this assertion a copy of a monochrome may be made in which various parts are transposed into different colours, without changing the tonal relationships. If this is done accurately, the result will show that whatever the colour used the same degree of quality, the same feelings of light, space, quality of paint, etc., will be found in the same degree as in the monochrome. Failure to exercise definite control over the tonal relationships in changing from one colour to another will make this experiment useless for the slight difference in these relationships which makes colour live and vibrate instead of appearing dead and heavy is a matter of complete technical control.

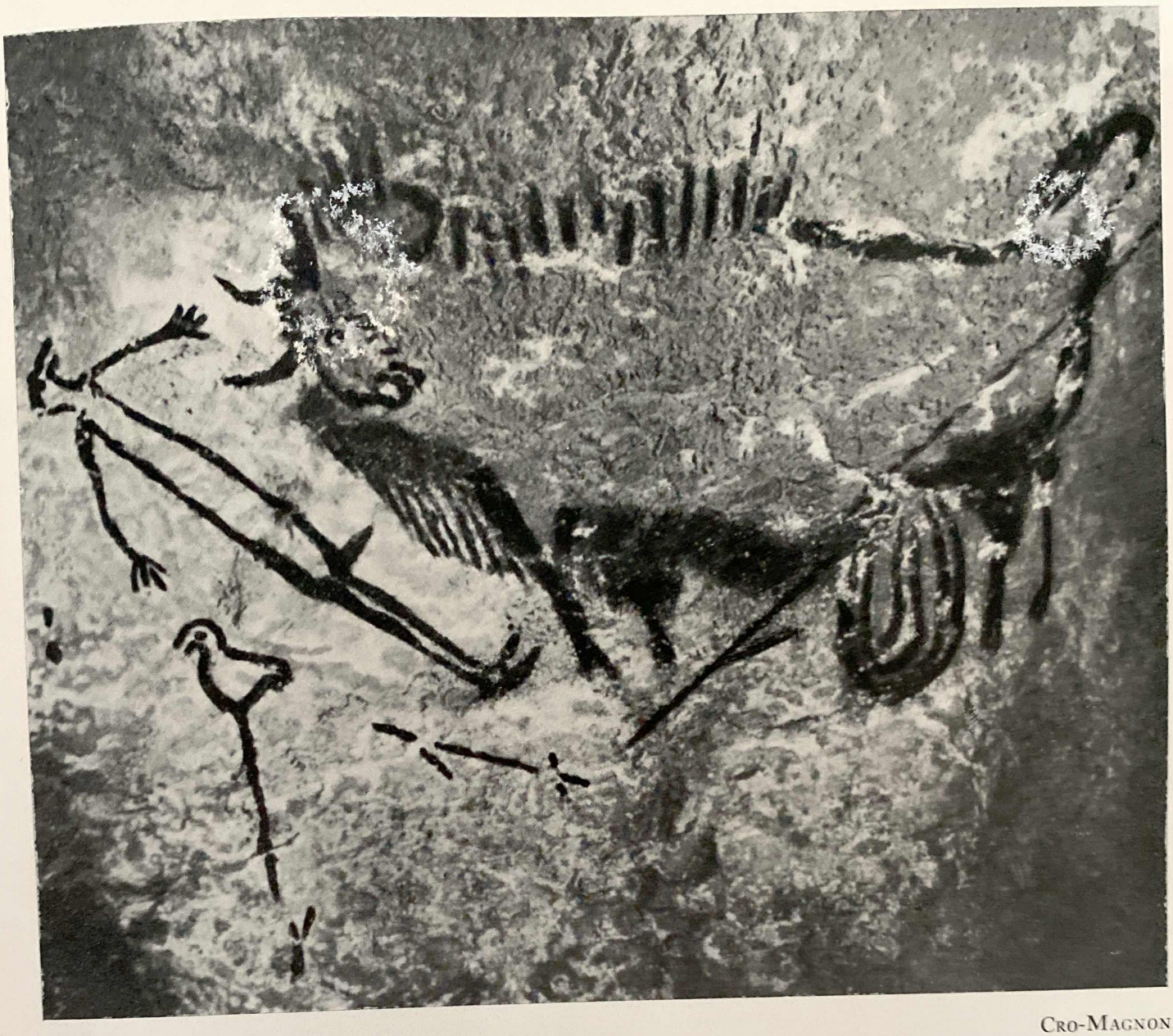
It cannot be recommended strongly enough that the student try a few experiments in chromatic transpositions from monochromes. While it is true that the monochrome does not speak to us in terms of chromatic sensations, it gives to its relations of tones and forms (the most important factors in depiction) sensations of space, light and character. These being given we can forget completely that chromatic sensations are non-existent—just as we can forget the want of colour in that magnificent piece of sculpture the Venus of Milo.

Many modern artists believe that the greatest difficulty lies in the colour problems. This mistake has been caused by the unscientific and haphazard manner in which they have been taught. It is not surprising that colour presents this great difficulty because their work shows only a limited understanding of the problems involved. The main effort has been towards experiment in colour

VELASQUEZ (1599-1660)

PLATE 1

"THE TAPESTRY WEAVERS"



CRO-MAGNON

PLATE 2 CAVE PAINTING

PLATE 3

PORTRAIT

ATTRIBUTED TO LORENTINO D'AREZZO
(C. 1460)

PLATE 4

LANDSCAPE

CLAUDE LORRAINE (1600-1682)

CLAUDE MONET (1840-1926)

PLATE 5

LANDSCAPE

PLATE 6

LANDSCAPE

VERMEER (1632-1675)

WHISTLER (1834-1903)

PLATE 7

"BATTERSEA BRIDGE"

PLATE 8

Mrs. SCOTT-MONCRIEFF

RAEBURN (1756-1823)

PLATE 9

GREUZE (1725-1805)

PORTRAIT

PLATE 10

VELASQUEZ (1599-1660)

"THE MAIDS OF HONOUR"

PLATE 11

RUBENS (1577-1640)

"HENRI IV RECEIVING THE PORTRAIT OF MARIE DE MEDICI"

VELASQUEZ (1599-1660)

PLATE 12

"THE CONCERT"

alone, tonal relationships being left to look after themselves, and since quality of colour is based on tonal relations, it is only too clear that they have been attempting an impossibility. By ignoring tone and attempting to produce beautiful colour by itself they become firmly convinced of the reality of this colour bogey—a bogey that has become more terrifying in modern times. None of these remarks on colour implies that the difficulties are being underestimated. The present object is to ascertain where the real obstacles lie hidden so that we may be ready and able to grapple with them. Colour to the modern student and painter appears a formidable and unsurmountable barrier, a problem which vanishes completely under a reasoned examination.

. . . . .

Let us continue the examination of the reproductions in this chapter in the light of the preceding statements. The illustrations (except where otherwise stated) are of the works of great painters.

To study the art of depiction from the longest perspective possible, let us examine plate 2, page 233. It is a specimen of the art of the Cro-Magnon. This particular example was found in a cave at Montignac. The word Cro-Magnon is a generic name specifying a race of people who existed in Southern Europe some fifteen to twenty thousand years ago. Some of the works of these early artists have, by a miracle of chance, been preserved. They were executed on the roofs of caves, preserved from all the outside influences which eventually destroy paintings.

It is needless here to describe the technical methods of these Aurignacian and Magdalenean painters except to say that their methods and materials were very primitive and as we have already stated, the art of depiction grew side by side with the general increase in knowledge accompanied by the invention of more efficient craft tools. In spite of the limitations which bound these early artists their results, as this plate will testify, were amazing—justifying completely the truth of the dictum that if we earnestly desire to express something we shall in some way discover and elaborate the means of expression. The illustration represents a bull or an aurochs and bearing in mind the elementary tools employed by the artist and the fact that this painting was done on the rough roof of a cave the result is excellent in its sense of characterization and vitality. We are left to wonder what the artist might have done had he had at his disposal the medium of oil-paint, such as we know it to-day, canvas and

brushes. For, once again, if we wish to appraise a work of art justly we must do so within the limitations of the period to which it belongs. It is interesting to note here how much more realistic the bull is than the hieroglyphic representation of the man and the bird and still more interesting from our point of view to find a possible cause for this obvious difference.

The idea was first put forward by P. A. Leason, an artist himself and a student of art history, that the animals portrayed by the Cro-Magnon artist were caught in traps (pits) from where they could be observed in a state of rigidity, giving to the artist the best conditions for research work into the knowledge of the appearances of them. Without knowing it these early artists were induced to copy their subject-matter under the same conditions which the modern artist exacts in his attempt to understand and exhaust the reality of appearances—a method of procedure, by the way, which has been slowly elaborated through the practice of all the significant artists from the Cro-Magnon to Corot or Constable. But as far as this early painter was concerned he used these conditions given by his trapped animals in an unconscious way without knowing that his craft descendants of twenty thousand years later would be imposing the same conditions for research on all their various subjects: bulls, horses, men, women, birds, etc. The Cro-Magnon artist profited unconsciously, therefore, by the conditions given by his objects of prey. Observe now the sudden falling off in representational accuracy when the same artist attempted to portray a man or a bird. Quite obviously he observed men and animals *in motion,* and since under such conditions he could not arrive at any definite knowledge of the appearance of men and animals in definite poses and definite conditions of light and shade (a fact which we have learnt since then) he was forced to content himself with a more or less conventional or abstract set of symbols. That he should think he could acquire definite knowledge of appearances in this way is not to be wondered at for even today we find people, ignorant of the methods by which artists obtain their results, believing that they know enough about appearances to portray reality in a spontaneously intelligible way. "I got it out of my head", we hear some of them say, but what they got out of their heads is only in the nature of a symbol or a picture-gram, as we find in the portrayal of the man in plate 2, page 233, or in an Egyptian heiroglyph.

The reason why the Cro-Magnon limner should be able to give a relatively living representation of an animal and fail so ut-

terly to do the same thing with man as his subject is now clearly evident and further substantiates Leason's theory.

For present purposes let us pass without further comment man's early effort through the media of hieroglyphs and picture-grams. We may add, however, before leaving this stage, that the object of these symbols was to convey a message of things and actions. The craft of such artists was more in the nature of *writing* than *painting,* and when the message was conveyed by these picture signs, the writer took no pains to make them more spontaneously realistic than was absolutly necessary. He was only interested in the conveyance of his message and unlike the true depictor (the Cro-Magnon was a depictor when he painted the bull, he was a writer when he "wrote up" the man) took little interest in the knowledge of visual phenomena. Outside of his attained objective his interest was a literary one, as distinct from the aesthetic interest of the complete painter.

It is of passing interest here to note that man's early efforts to construct a written language were almost entirely based on ocular interests, pointing once again to the paramount importance of the use of the eye in the mental development of the human being.

The interest of the Cro-Magnon in the bull was almost entirely an objective one, his interest in the description of a man was in the same degree, subjective.

The next plate, No. 3, page 235, bridges a huge gap in time between the Cro-Magnon to the Fifteenth century. It is attributed to Lorentino D'Arezzo and was painted round about 1460. Compared with the Cro-Magnon, we note how much more readily and accurately it conveys the reality which the artist set out to interpret. The advance made is so obvious that no comment is necessary and it will be interesting to compare the technical methods employed therein in comparison with those found in the art of Cro-Magnon man and all the artists who succeeded D'Arezzo.

We have already said that the progress of the art of depiction depended on the general knowledge of the period in which the artist lived coinciding with the invention of newer and more efficient media. Unlike the Cro-Magnon, D'Arezzo had at his disposal the most efficient medium as yet invented—oil paint. The great advantages of the oil paint medium over all others may be summed up from its most important asset; the power of definitely controlling the tones desired by the artist. To make this statement clearer it will be useful to compare some of the potentialities of the oil-painting medium as

against those of the water-colour. For instance, in water-colour the white paper represents brightness in a static condition. On this paper, according to his subject-matter, the artist can only produce darker surfaces. These surfaces are transparent, such as they appear they are composites of the colour applied modified by combination with the whiteness of the paper. This means that while in oil-paint the artist may put on his canvas an opaque, but consciously defined, tonal degree, the water-colourist can only obtain his tones in an approximate way. Now, the tonal degrees which make the difference between a picture which looks dead and one which radiates life and reality are very slight and cannot be dealt with approximately. Summed up, on this point (tone) the painter in oils can proceed on any part of his work, as can the water-colourist, from light to dark, but he can also, unlike the latter, progress from dark to light as required. When the water-colourist has lost the light produced by his white paper he has no other resource but to start afresh. Further, with regard to colour the water-colourist is obliged to proceed uniquely in the direction of warmth; when he has lost his pearly greys he has, again, no other resource but to start on another sheet of paper.

Such are the main differences between these two media and the explanation why oil-paint is the preferred medium for the pure research artists.

D'Arezzo appears on the scene at the beginning of the use of oil-paint. His work shows a transition between the transparent methods employed by previous artists in which the full possibilities of this vehicle as a plastic one had not been thoroughly exploited and its use as a controllable opaque paint. Although using oil-paint, D'Arezzo had, like the water-colourist, only an imperfect control of tonal relationships attained in a purely instinctive way.

Before passing on to our next example, note the pre-occupation of the artist with small details; compare this work with the truer statements on the appearance of things by a Rembrandt or a Velasquez in which the imagination carries us over to the feeling of all the detail we would see if we examined a small piece of their paintings. Velasquez and Rembrandt, since we are citing them as more modern artists, had all the technical ability and patience of a D'Arezzo or a Van Eyck. They could have done what these Fifteenth century artists did, but D'Arezzo and Van Eyck without

the knowledge of Rembrandt or Velasquez were not able to give the automatic sensation of the reality of appearances. Hence their fear and avoidance of three-dimensional problems.*

. . . . .

Plate 4, page 236, represents a landscape by Claude Lorraine (sometimes called the father of landscape painting in Europe). Plate 5, page 237, is by Claude Monet, an example of meaningless colour; the type of picture with which we have, unfortunately, become only too well acquainted in modern exhibitions.

The Lorraine picture has been tested by time and in relation to its period finally classed as great art. The contrasting picture by Monet belongs to a type of work which, while it may form a bone of contention among some contemporary artists and art critics has yet to earn the imprimatur of posterity. This hall-mark or guarantee it is never likely to receive, for enough time has elapsed since it was painted and it can be now justly labelled as one of the sterile methods of approach which litter and obscure the direct development of the art of depiction.

Reverting to the Lorraine we find that it gives sensations of space, atmosphere and light; an airy spaciousness into which a bird might fly; observe it upside-down and it will be seen that these three-dimensional sensations still remain.

Unlike this example of pure art we do not get these sensations from the Monet. Partially close the eyes; use the diffusing screen; turn it upside down and we shall find that the picture gives the sensation of a disturbed surface which in the main stays flat. The water (which under any conditions of lighting should give sensations of flatness) appears to run uphill. Even in a haphazard way a flat surface cannot be covered by different tones without producing sensations of planes, but these are only valuable inasfar as they correspond to the planes in the actual subject-matter. In simple language these planes are "topsy-turvy", irresponsible insofar as they fail to give the natural sensations which are the only tests of a picture. Since the Monet shows less clear and accurate definitions of the three factors it can be placed in relation to the Lorraine as a less mature

* It was due to the imperfect control of tonal values which give the sense of planes that so many of the painters of this period avoided the problem of foreshortening by painting portraits in profile. In proceeding in this way they were acting like the ancient Egyptian sculptor when he carved a heiroglyph in stone.

performance. It is a work which might have been considered seriously before the time of Claude Lorraine, but coming later must be classed as superfluous.

With regard to these two pictures as reproductions we must note here that photography cannot enhance the qualities of a picture. Some of them must inevitably disappear, for reproduction changes in certain degrees, the pictures reproduced. But the question as to how far a photograph is capable of reproducing its subject-matter exactly cannot be discussed here. For the moment it is sufficient to state that the finer the picture the more will it tax the limitations of any reproductive medium. As for all the illustrations which we have to compare, they have undergone similar treatment and are equally well reproduced.

At this point it is relevant to comment on the modern epidemic described as "individual expression." According to some modern art criticism the picture by Monet would be described as an example of self-expression, whereas that by Lorraine would be sneeringly classed as *mere representation* or sheer imitation. This criticism would be quite true for it is precisely because the Monet contains more conscious self-expression* than the Lorraine that it can be classed as less significant art.

John Constable has emphatically given his opinion on this strange idea of "self-expression" in stating that he could only consider it as a sign of human limitations and there is no doubt that the art of each period which has lived has always been characterized by its relative suppression of individual ideas and fancies. Individuality in art spells decadence; individuality appears when the artist has failed to interpret or has deliberately falsified impersonal visual truths.

. . . . .

Compare now the two examples, plate 6 and 7, pages 238 and 239, by Vermeer and Whistler—painters whose place in the history of art is unchallenged. As great artists their depictive expressions

* We use the term "conscious self expression" because as against the Lorraine the basis from which Monet starts is a subjectice idea resting on a physical basis—the physical admixture of colour elements as against the pigmental. The example, cited on page 229, of the spinning-top explains what is meant by the words "physical admixture." Insofar, therefore, as Monet imposed this foreign theory and insofar as his work is less real than that of Claude Lorraine he can be accused of flouting the evidence of his own eyes in favour of his inwardly constructed theories.

do not exhibit individual ideas. Rather do we mark in them the desire to interpret the subject-matter as far as possible, impersonally.

These two paintings have been chosen deliberately because they contain certain topographical similarities—an expanse of water with objects behind. Let us suppose now that these two masters had by chance painted the same subject. In this case (judging by the evident truthfulness of the two examples and their similarity consequent upon the similarity of their subject-matter) the two results would have been very much alike, if not, indeed, identical. Roughly speaking, the pictures are differentiated on the topographical subject-matter. All great works of art resemble each other inasmuch as they are in varying degrees exact interpretations of nature; their fundamental differences invariably lie in subject-matter. These differences are quite inevitable; the infinite diversity which nature presents to the eye is such that it would indeed be an extraordinary coincidence if two artists had ever painted two pictures resembling each other in every possible respect.

The Vermeer and Whistler have so far been considered as being equal in merit and though it may seem hypercritical to draw comparisons between them, the lesson of art will be further understood if we make these comparisons. Turn the two pictures upside-down and it will be seen that the elementary sensations contained in all true art are much more vividly depicted in the Whistler; the sky is more airy and further away from the eye; the water is perhaps a little more distinctly flat; a general sense of atmosphere and space is conveyed with greater conviction. Whistler arrived at a later period in the history of painting than Vermeer and consequently we must expect from his work a greater degree of perfection. Both men are great within their epochs and no slight is cast upon Vermeer by making this comparison, since the greatness of an artist is measured within his period. We see this progression of depictive realization in the work of Van Eyck, one of the first painters to use the medium of oil-paint and the more advanced science which could only happen *after* Van Eyck, can be seen in the work of Velasquez. Again, we view this evolution from a longer perspective, from the art of the Cro-Magnon to the art of Constable. The accepted idea that art does not advance is a popular fallacy inasfar as its true nature is not properly defined. We must understand rather that art remains one and the same principle from pre-historic to present times, but its expression has progressively changed from elementary to more complex depictive achievements. The art of Van

Eyck though more elementary than the art of Velasquez had for its impulse the same objective for art is the expression of the knowledge of its epoch—outside of this niche it cannot be appraised justly.

. . . . .

Plate 8, page 240, represents a portrait of Mrs. Scott-Moncrieff, by Henry Raeburn. In this painting we sense immediately the same simple, natural truths of unity, space, light, shade and character which we have already noted in the landscapes of Claude, Vermeer and Whistler. The eye complacently embraces the whole canvas. There is no hurry or confusion here; we pass from the elementary impressions to later ones in that same orderly, dignified manner in which nature and true art reveal themselves to us. It is a convincing demonstration of the *scientific order of the ocular impressions.* Starting from our first sensations we shall find that we have received impressions of vivid reality to the point at which Raeburn deliberately stopped painting. He might have attempted to *finish* his work further, but he was well aware that in the recording of definite facts his work must be based on the scientific order of the visual impressions, and up to this point he left his work as a true record of what he had seen. He chose to leave it as it stood, rather than obscure the truths which he had understood.

Whistler has said that no work of art was ever finished, a statement which has been little understood. When the highest form of painting is considered as an impersonal translation of nature within the limitations of the medium it becomes apparent that no painter, however great, can attain absolute perfection. He knows only too well that his picture will never be finished and is also aware that it takes but a few of nature's truths correctly stated to form a work of great beauty.

Glancing once again at the portrait of Mrs. Scott-Moncrieff, we see how readily it conveys natural sensations, e.g. the feeling of a woman's round body with space behind. Formal characteristics are so well observed that we know the woman's age and her physical attributes. Above all this, is the definite knowledge that *one* light from *one* source is dealing impartially with all the various components of the picture.

Turn it upside down, and though we may not be quite sure about minor characteristics, we still derive the cardinal qualities of visual

phenomena which are found in any part of nature, indoors or outdoors, upside down or right way up. Note also that the picture represents a woman in the conditions already described *and at a certain definite distance from us*—the focussing point from which Raeburn saw his model. This definite sense of distance is rarely achieved by painters; it is the evidence of complete technical mastery; the latest development in depictive science

Turn now to the Greuze portrait, plate 9, page 241, to compare the sensations received with those which we have derived from the Raeburn. Remembering the preceding statement about the Raeburn, we find it quite impossible to say from what focussing point Greuze viewed the little girl. The sensations of planes are, to use the most descriptive language, "all over the shop." The picture conveys little of that sense of dignity and unity which we have discovered in the Raeburn; that sense of dignity and unity which always exists in whatever natural problem the artist may set out to resolve. Subject the two pictures to a further and more exacting test; close the eyelids slowly to see what happens to the pictures when reduced to a simpler impression. In that state the Greuze "flattens out" rapidly, while the Raeburn still conveys the interpretation of fundamental ocular facts. Reverse the process, slowly open the eyes and see how the Raeburn gradually unfolds its meaning. It is gospel at any stage of ocular analysis because it is built up on that *scientific order of ocular impressions* which, when translated into paint gives us back automatically the illusion of reality, complete in all stages, to the point attempted by the artist. Let it be repeated,—because the statement is important—not finality or perfection, but scienific accuracy within limitations.

Tolstoi defines the function of art as the re-creation in the mind of the observer of impressions received by the artist and conveyed by a medium. This definition being accepted it is not for us to cavil at what these impressions may be—the art lies in having re-created them; the carcass of beef painted by Rembrandt, plate 17, page 269, is great art, for it gives us back the impressions which we would have received from his actual model. The dwarfs painted by Velasquez are equally great for exactly the same reason. Some of us might prefer illustrations of other subjects, but in spite of these personal inclinations—which do not concern art—these men will remain two of our greatest artists, not for what they might have painted, but for what they actually did paint.

Personal preferences do not affect the principles of art. Art

soars disdainfully above such trivial considerations and the great artist is he who accepts nature as she is—not he who does what pleases himself or others.

It was said earlier that art is a religion and it may be added that the practice of this religion has compelled the true artist to obey the tenets of a creed surpassed by none in the stringency of its obligations.

. . . . . .

Plates 10 and 11, pages 242 and 243, are chosen, like the preceding examples because of certain similarity of subject—they both represent a group of figures. The Velasquez is one of his masterpieces; it may be studied as the consummation of his lifetime of depictive research, containing those qualities which are inherent in all visual phenomena—a fact which classes it as art of the purest.

We derive sensations of actual space from it so vividly that we might guess to an inch the distance between Velasquez and his canvas in the foreground. The more we examine the work of this great painter the more we understand why he takes such a high and important position in the history of painting. Probably no finer work of art has ever been produced than this great masterpiece. Velasquez was a great artist, inasmuch as he had succeeded in mastering his own preferences to become the humble and obedient servant of his eye. There is no evidence contained in this picture to show that he took less interest in the painting of the dwarfs on the right hand than in the other personages in the picture. Had he done so he would have painted them less well and thereby completely destroyed the sense of unity of which we have spoken, for it is only when the artist treats every part of his canvas with equal care and respect that he succeeds in establishing this fundamental quality.

To Velasquez nature was a vast inscrutable maze of visual cause and effect and he knew, therefore, that he must allow his models to pose themselves in positions which came naturally to them; that any dictation or demands from him would produce stilted, artificial postures. His acceptance of the positions which his models chose to present is the cause of that feeling of *naturalism* which each figure gives, including even the dog. He stands pre-eminent in the history of depiction. Hieroglyphs, ideograms, conventions and technical formulas have disappeared — his work requires no mental translation. It can be felt.

No man taught more conclusively in any other branch of know-

ledge the lesson of the objective approach—the true source of human science.

The preceding remarks make it almost unnecessary now to call attention to the obvious faults of the Rubens: the uncertainty of the lighting, the general confusion of planes and the want of space and atmosphere require no comment. Rubens has been forced to impose attitudes on his models with the object of telling a story. In this way he has transgressed the natural laws of cause and effect as distinguished by the eye—the result is a sentimental idea hanging limply upon relatively inadequate ocular facts.

Pure depictive art requires no explanation other than that given by the eye; true appreciation is only felt by those painters who honestly attempt to interpret what they have seen. This same appreciation is attained by non-practitioners insofar as they expect the picture to convey natural sensations irrespective of literary, sentimental or religious interests.

Ocular observation defined by an obedient brain is the sole factor in the production of pure art; when the imagination is allowed to interfere in this partnership confusion follows. Art then becomes a hybrid—a mixture of vaguely felt ocular truths crossed with personal ideas, which latter could be more adequately expressed in some other medium.

The eye itself is solely concerned with tonal, formal and chromatic values and the depiction of these three factors unalloyed constitutes the purest form of depictive art. All other forms in which foreign elements have intruded themselves belong to a minor category. As already noted the development of the art of painting in the order of time shows a progress from conventional symbols to scientific definitions of visual phenomena which are self-explanatory. Similarly it is noticeable that this same development occurs in the individual painter's work. Like the human foetus passing through the progressive stages of its organic evolution, all viable painters passed through all the phases of the development shown in the whole history of painting from its earliest forms.

With this demonstrated basis of criticism in mind, observe now an early work of Velasquez, "The Concert," plate 12, page 245. How immature this work appears when we compare it with the fully blown flowers of Velasquez's art, "The Maids of Honour" and "The Tapestry Weavers." In this early effort we note his obvious search for unity through the addition of small details. This method of approach produces a hardness of outline and less feeling of atmos-

phere than is seen in his later works. Like his craft-ancestors he is attempting to give the sensation of unity from the small end of the scale of ocular sensations. This comparison shows that with greater experience he became aware that a convincing revelation of the whole cannot be achieved in this way; that he had to leave off the easy job of noting small details and hold in mind the fundamental obligation of unity from the beginning to the end. Little preoccupations produce little works of art. The great painters were not little men, their works show just how much they were trying to think in a big way.

We can see the great advance in the knowledge of appearances which Velasquez had made, how in his later works the eye calmly embraces the whole scene in front of him, how they give us the feeling of space and distance, real light from one source and all the factors which convey to us convincingly the sense of the third-dimension—that culminating triumph of the whole science of painting. In "The Tapestry Weavers," the positions of the various models are perfectly natural, they are seen performing in a natural way the jobs entailed in the making of tapestry. The girl on the right, carding wool, is just carding wool; the woman behind the spinning-wheel is equally doing her job in a natural way—we can almost imagine Velasquez saying to her, "get behind that wheel, start work, set it spinning." Observe how it does spin—quite naturally.

Note the absence of any melodramatic sensations coming from this picture which are more evident in the Rubens. This great Spanish artist was the most naturalistic painter that the world had seen, and it is strange that this should be so since he worked in a court in which the ceremonial exactions were perhaps more stringent and artificial than in any other known code of courtly punctilio.

It seems paradoxical that so natural a painter should have bloomed in such surroundings and if there is any explanation it may be in the fact that Philip IV, who was a staunch champion of Velasquez and who defended him against many jealous rivals, found relief from his boredom and melancholia in the presence of this intensely human and natural painter. No doubt the art of Velasquez was the equal and opposite reaction to the intolerable artificiality of the life of the court. The happiest moments of Philip's life must have been spent in the studio and company of his "beloved painter."

. . . . .

Pure depictive art is the science of the ocular impressions effected

within the limitations of a medium. Consequently there can be no quarrel with art which has remained within these bounds. As engineers take care to plan the use of their materials well within their respective breaking strains, so do competent painters work at a safe margin within the breaking strains of their theories and media.

The reasons which compel the painter to leave his work at differing stages are governed by conditions which concern no one but himself; that which should interest us is whether he has understood part of what he saw and translated it in a manner which we understand. No true artist has ever left any two of his pictures at the same stage of what is popularly called *finish,* but, at whatever stage he may have ceased painting his work is art of crystalline purity containing the great message which such forms of art always convey.

A few simple scratches and rubs of sepia water-colour by a Rembrandt make a work of art, whilst the most pretentious impostures of the academician, the "pot-boiler," the mere picture-maker, are unscientific and worthless.

. . . . .

Observe now the pictures by Hiroshige and Turner, plates 13 and 14, pages 264 and 265. Both have been done with less efficient media of depiction (wood-blocks and crayon-wash) than that of oil-paint.

How well the first exemplifies the practical approach towards depictive problems. We see how the Japanese has attempted to define only a few simple planes and characteristics of form representing distinct demarcations of distance and character and how he has succeeded in making the planes stand in their spatial relationships to the exclusion of useless detail. View the picture upside down with half-closed eyes and note that these three-dimensional qualities exist *automatically.* This picture is a convincing example of visual objective facts given spontaneously. Hiroshige's achievement is all the greater if we consider the technical difficulties imposed by the rigid nature of his medium (wood-blocks).

For those who might not fully understand the use of the word "rigid" in its application to this medium, a brief explanation is called for. Technically a colour-print is made by the impression of engraved blocks as letter-press printing is made by the impression of type.

These blocks in the number of the tones and colours desired are

then printed over each other with different coloured and toned inks —a process demanding greater skill than is necessary in the printing of type. So much is this so that in order to obtain the best results it became a special craft in itself.

Owing to the limitations of this medium of colour printing a certain formality is apt to characterize it. We are then apt to think that this formality or conventionality was consciously imposed by the artist. As no artist, however great, can override the limitations of his medium, we must consider these limitations in relation to the result produced. That being agreed upon we observe once more the Japanese print to note that it contains no evidence which would make us feel that the artist was consciously imposing schemes of his own on the plans of nature's visual phenomena. On the contrary, the decorative qualities which it possesses are based upon the realistic interpretation of natural truths, and not upon personal fancies or prejudices.

Japanese art of all periods is one of the most realistic forms of art that ever existed, and this much could also be said of Chinese art. The words "Japanese" and "Chinese" are used here reservedly, because art is only great insofar as it is universal. Certainly, there are such things as Japanese, Grecian or French *subjects,* but national labels are ill-placed and afford little help in the understanding of the purest and most significant works of art.

Plate 14, page 265, is a sketch from the Liber Studorium of Turner.*

The fundamental qualities of light, shade and planes which are always found in nature and pure art are not revealed as readily as in the Hiroshige. It does not give that sense of oneness which is so marked in the colour-print—that sense of dignity pre-eminent in nature and less and less marked in works of art as we descend the scale of depictive achievement.

. . . . .

Plates 15 and 16, pages 266, 267 are combined to furnish an opportunity of commenting on the popular misconception that some artists have been endowed with special aptitudes for special

*This picture in crayon-wash by the great English painter is not necessarily one of his best works. Being taken from that interesting collection of landscapes in the Liber Studiorium it is in quality more or less equal with the others in the book.

types of illustrative subject-matter. This idea which has been put forward by critics and not by capable painters, presupposes that some painters are specially endowed to excel as portrait-painters, landscape-painters, genre-painters and so on. That people in these days should entertain such unpractical theories is the plain evidence that they do not understand the true nature of the painter's craft. The real truth is that the complete artist is a craftsman with a certain degree of the exact knowledge of visual phenomena which he can use on any kind of literary subject-matter.

The two pictures now under consideration have been painted by the same artist, Jean Baptiste Camille Corot, and in them we may note exactly the same quantum of knowledge revealed through totally different kinds of literary subject-matter.

Because he has painted more landscapes than any other subjects Corot must not be classed thoughtlessly as a "landscape-painter." That he painted in his life-time more landscape than figure subjects is entirely traceable to the conditions and circumstances of his life, even as Velasquez painted the grandees and dwarfs of Philip's court, as Vandyke and Holbein painted the nobles of England, or as Franz Hals painted the habitues of his pot-house.

The special work of the painter consists in the study of ocular impressions. Artificial classifications based on the names of "things" only serve to divert the attention of the observer from the real story of the pure art of painting, a story which does not lend itself easily to verbal description.

Having noted carefully the equality of achievement in the two pictures we may note also that they reveal the simple qualities of light, space and definite character in a convincing way. Were it not for certain tell-tale objects in the figure picture representing a corner in a typical French studio we might possibly attribute the picture to some other painter.

Note also the evidences of Corot's want of interest in the mere illustration of "things" and his great interest in the visual problems involved.

Instances of this want of concern of popular interest are to be found in many of the works of great painters, and this want of concern becomes more marked as we mount in the hierarchy of the craft of painting.

We see this indifference in numerous examples of Biblical subject-paintings in which no apparent pains have been taken to portray

the costumes and other appurtenances with historical accuracy; we see it in the "Flayed Ox" by Rembrandt, plate 17, page 269, where he paints the hanging carcass with apparently as much reverence as he would a Crucifixion; again we see it displayed when Millet abandoned his pretty nude subjects to find pleasure in the visual problems contained in his uncouth peasants and when Chardin disdained the emasculated art of his contemporaries to revel in the endless variety of tone, form and colour as perceived on apples, pears or bottles.

Comparisons between paintings of similar literary subject-matter by two capable painters lead to the conclusion that with the same degree of knowledge, the same conditions for work and identical subject-matter, they would produce pictures alike in every respect. No such conditions are every likely to happen, consequently the above statement can only be inferred, although the obvious evolution which can be seen in the works of painters studied in order of depictive achievement, leaves us in no doubt about the ultimate end or meeting point. It cannot be too often repeated that paintings studied in the order of representational achievement demonstrate clearly that this success is due entirely to the increasing impersonal objective of the artists. That is to say, we note that these artists have resigned themselves humbly to the role of interpreter, discarding at the same time unpractical ideas about their creative powers.

Painters are often asked by people who are unaware of the practical difficulties, if it would not be possible to combine *great craftsmanship* with *popular subject-matter*. There are many answers to this query, all of them in the negative. For the present it is sufficient to say that a painter dare not make this concession because the interpretation of light, shade and colour is in itself more than sufficient to exhaust the powers of even the most capable. Apart from the fact that any departure from actual ocular translation—as when a painter struggles to obtain literary truths—will only lower the quality of the art itself (which, to the artist, can never be, or never has been, perfect enough), we may take it for granted that any such mixture would only lead to some abnormal or artificial result. There is no doubt that this mixture of ocular half-truths and literary "facts" produces a hybrid form of art.

Compare the *subject-pictures* of Rembrandt with those in which he was solely occupied in the interpretation of ocular facts and the loss of ocular significance in the former due to the intrusion of the illustrative element will be easily noted.

. . . . .

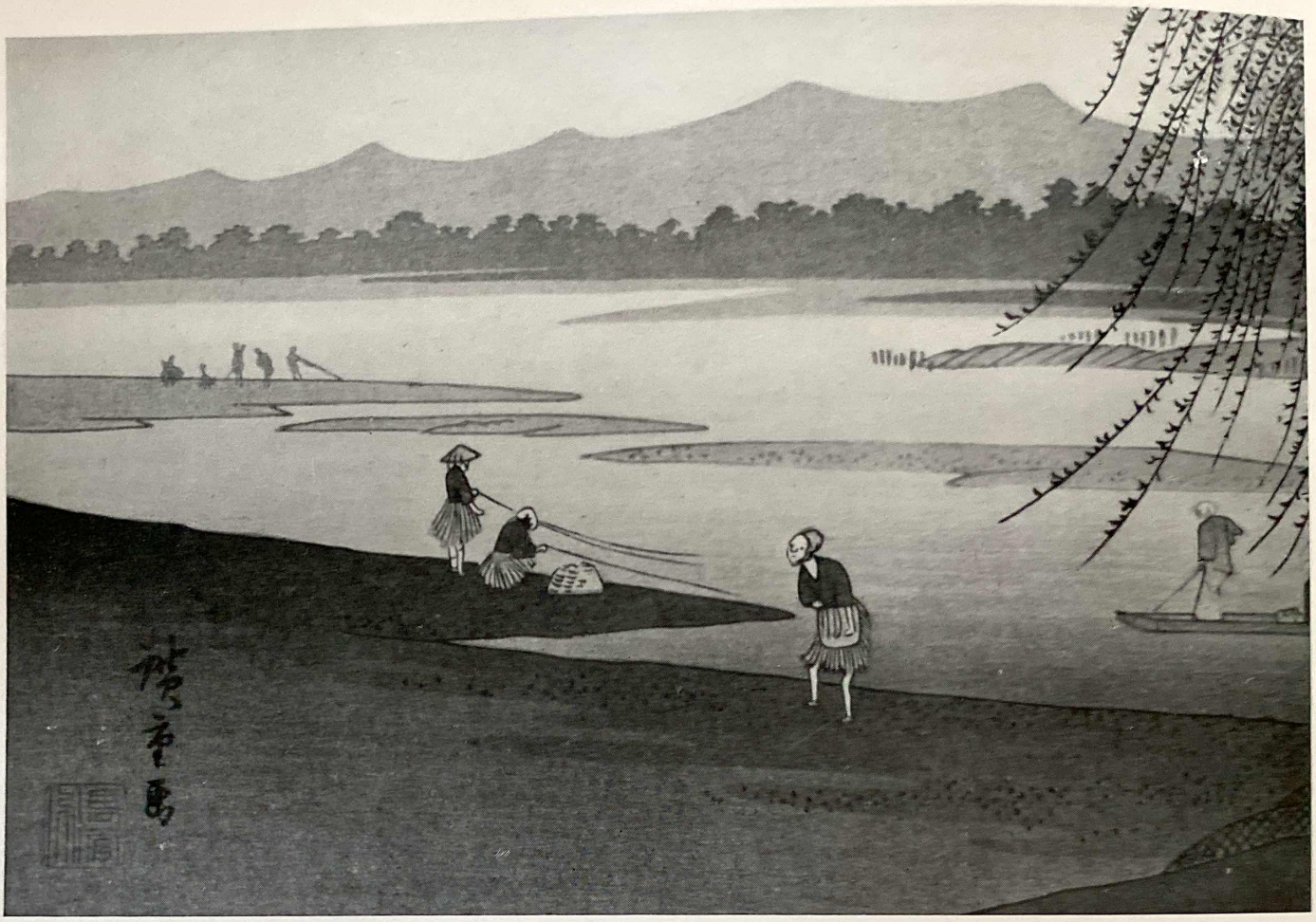


PLATE 13

LANDSCAPE

HIROSHIGE (1786-1858)

TURNER (1775-1851)

PLATE 14

LANDSCAPE

PLATE 15

LANDSCAPE

COROT (1796-1875)

COROT (1796-1875)

PLATE 16

PLATE 17

REMBRANDT (1606-1669)

"FLAYED OX"

PLATE 18

"THE CONCERT"

GIORGIONE (1477-1510)

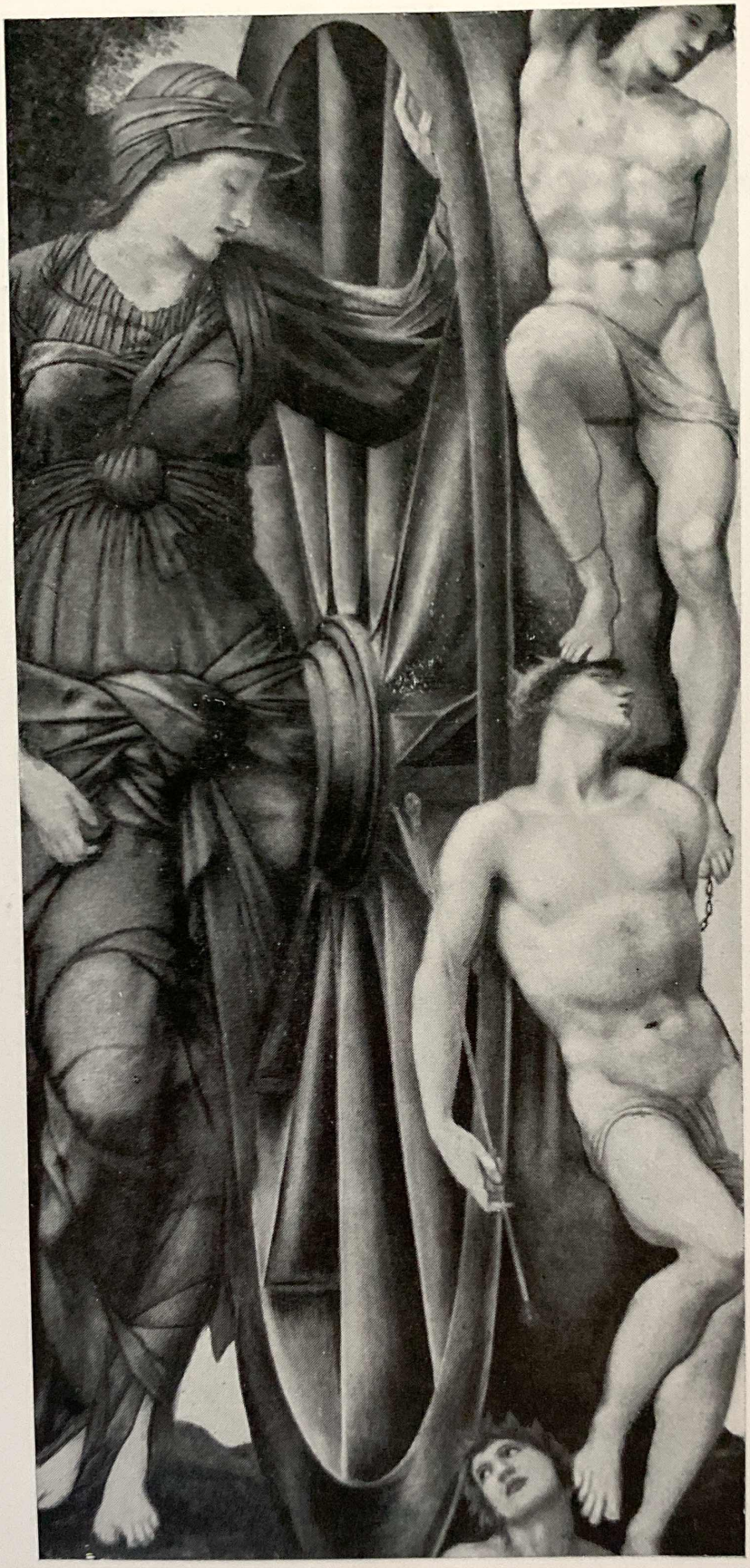


PLATE 19 BURNE-JONES (1833-1898)
"THE WHEEL OF FATE"

PLATE 20

"DEJEUNER SUR L'HERBE"

MANET (1832-1883)

COROT (1796-1875)

PLATE 21

LANDSCAPE

It was said by Gustave Flaubert—

"There is no such thing as beautiful thought without beautiful form, and the converse is also true. This is why there are neither beautiful subjects nor ugly ones, and why we can almost lay it down as an axiom from the purely artistic point of view that there are none such; style being in itself an absolute way of seeing things."

This faith in the importance of style; this acceptance of it as an absolute way is perhaps more easily discernible in painting than in the sister arts.

To Velasquez the head of Philip was not more august than the legs of "Don Juan of Austria" or the puckered and wizened face of "Don Antonia, the Englishman"; the greater reverence for nature which Corot acquired in his development as an observer shows a growing indifference to the blandishments of popular conventions. His immature attempts were marked by the endeavour to fit facts into some preconceived idea of aesthetic fitness, by the introduction of figures and the manipulation of trees in order to illustrate some classical legend. Parallel to his development in the knowledge of appearances and as a craftsman, was his discovery that nature is always beautiful, that we cannot distort or add to any of her charms without turning her into a scented coquette. Having, like other great painters, reached this state of faith, Corot accepted humbly what he saw and applied all his energy to the more perfect attainment of depictive interpretation. If we compare one of his early works, the "Danse d'Amours", with his mature literal transcription of "la route d'Arras" it will be seen just how far in later life he was content to remain the simple interpreter of nature unadorned and unchanged.

. . . . .

The introduction of ulterior aims in art has led to many strange experiments—escapes from reality. History abounds in these offshoots which have proved their hybrid natures by leaving no issue. Pure art may be soiled by foreign elements but since its impulse is a healthy human instinct it reappears in what we call periods of renaissance; like the crystal its formation depends on the occlusion of foreign elements. Decadent forms of art spring up but once to live for a brief season and to die forever. We shall not see any resurgence of the peculiar art-fashions which are designated by the titles: Historical Art, Romantic Art, Symbolic Art, Rococo Art, Baroque Art, Mannerist Art. We need not discuss at length the ideas underlying these aberrant forms of depiction, but it will be

instructive to take a peep down one of these blind alleys—the dead-end of pre-Raphaelitism.

Plate 19, page 271, is a fair example of this school of art. It is the work of Sir Edward Burne-Jones, R.A., perhaps the most widely known of the pre-Raphaelite brotherhood. It is contrasted with a picture by Giorgione, plate 18, page 270, a contemporary of Raphael. "The Wheel of Fate" is the kind of picture which leaves the uninitiated in a mentally fuddled condition. From it neither he, or for that matter anyone else, can feel sensations of ocular truths and the few which it may suggest are not conveyed directly to the eye but are arrived at by a process of mental deduction helped by what is loosely called the imagination. Because it requires this extraneous aid it cannot be classed as a pure form of art, nor can it claim to universality, for any painting which depends upon what is called imagination must be a different thing to different people according to their personal experiences, prejudices and knowledge. We can understand pure art in the degree of our knowledge and analysis of it, but, at whatever stage we may have arrived in this analysis, we have always received, *directly,* something which was understandable.

Burne-Jones' picture is almost devoid of any sensation of light and space. Turned upside down, it becomes almost a flat surface. Judged by accepted standards it is an elementary performance of little interest. It is needless to remark on its obvious faults, such as the irregular roundness of the cartwheel at its extreme height, since true form can not be conveyed except through the aid of tone of which factor the painting shows little conscious control. This being so it can not give a satisfactory illusion of perfect form.

The declared intention of the pre-Raphaelite painters was to return to the state of painting before and up to the time of Raphael. The idea behind this back-somersault was to trace art from what they called a pure source. But such a strange reaction could only be justifiable if no true art had been produced after Raphael. This presumption was quite erroneous and in acting on a mistaken idea they threw away the accumulated science of the great painters from that period to their time. It is, of course, manifestly absurd to class painters such as Velasquez, Rembrandt and others of that calibre as having nothing to teach or as artists who had deviated from the mainstem of the development of the science of depiction.

Psychologically, the reason for this strange retrogression is only too clear. The mental condition of the pre-Raphaelites was that

state of mind which make people wish with longing for some imagined "golden age"—a vague dream which human beings indulge in in moments of defeat, depression and impotence. It was the easiest road for such men to tread, afflicted as they were with the horror of things as they are, but to those who possess the key to the language of depiction their honesty, courage and knowledge may rightly be questioned. Howbeit, the infallible judgment of posterity has finally classed their weak experiment as futile. Pre-Raphaelitism in England was merely a local artistic disease which never succeeded in crossing the Channel—other countries and other times have had their own local aesthetic reactions.

The art of Burne-Jones is the cry of a lost soul. He was not a capable craftsman and his feeble attempts at art expression only serve to bear out the dictum of Diderot,

"When one despairs of making something beautiful, natural and simple, one tries something fantastic."

"The Concert" by Giorgione, plate 18, page 270, is the work of an authentic pre-Raphaelite. In contrast to the anaemic "Wheel of Fate," this picture demonstrates how the artist was quite content to paint his subject-matter as naturally and realistically as possible with all the depictive science extant in his time.

Where Burne-Jones escapes into the illustration of abstract ideas and sentiments, Giorgione bravely affronts reality. He was a much more capable craftsman than Burne-Jones; his superior technical knowledge permitted him to reveal the beauty which is found in any part of nature—a beauty which had never been glimpsed by the less skilled and more timorous "pre-Raphaelite". The history of art abounds in similar comparisons between the realistic, virile work of enduring masters and sterile art forms.

The complete history of depictive art shows that all artists who were destined to become landmarks were imbued with a healthy respect for the art knowledge of their ancestors. Hence they were satisfied to stay temporarily in the world of pictures as a student of any other science is obliged to live for a time in the world of text-books. In this way they learnt and assimilated all the known and valid traditions to pass eventually to a stage where they were obliged to depend on their own efforts.

"The Concert" is a masterpiece within its period and has been a source of inspiration for many young painters still in the formative years. We have said that all great artists pass through the progressive stages in aesthetic development and that none of them

are exempted from the obligation of living in the text-book world of pictures. A notable example of conformance with this obligation is evidenced in the "Dejeuner sur l'herbe" by Manet. Reference to plate 20, page 272 will show the similarity in subject-matter and all in all we are made to feel had Manet never seen "The Concert" he would never have painted the "Dejeuner sur l'herbe". This picture when first exhibited in Paris excited the anger of the orthodox art critics so much that policemen had to be posted before it to prevent irate people from damaging it. Manet, who was one of the great artists, passed in due course out of this period of aesthetic imitation from which stage he appears for the first time as an all-important figure on the scale of depictive evolution.

. . . . .

Having carefully analysed the pictures reproduced we may now recapitulate and classify the qualities which we have found to be invariable in them.

The analysis of these reproductions has been conducted in no haphazard way, being directed always towards the discovery of qualities and factors which are contained in all accepted art.

It is reasonable to think that the common characteristics of undisputed art can be considered as visual statements of the eternal truths and laws of appearances. It must also be assumed that these factors or qualities constitute at least the framework, skeleton or scaffolding, of all pictures claiming ranks as works of pure art. In these days of hysterically exaggerated individualism it may be urged that the true art of today need not necessarily contain these same truths, but against this objection the evidence contained in the art of the past clearly indicates that art, like other sciences, is based on tradition—the knowledge of the past; that its evolution has always moved from simple to more complex truths and that, however far it may have developed in complexity, it holds within itself always the distinct evidences of its complete ancestral history.

What is called "modern art" will be finally placed when the ephemeral fashions contained in it have ceased to interest the artists and critics of the future. Works of art, like other scientific manifestations, are finally classified by the repeated assertions and demonstrations of those people who have taken the trouble to study and comprehend them. There is, therefore, no valid reason why we should not make some attempt to apply our knowledge to

the comparison of contemporary works, for, if we have already recognized the essential qualities of pure art, we may then subdivide the art of today approximately into two classes: 1. those containing qualities invariably found in the accepted art of the past; 2, those containing none. The latter class can then be passed over leaving us free to bestow complete attention to work which can educate.

The painter's science is built entirely upon comparison, in the same way as any other science. Had it always been subjected to impersonal and reasoned criticism we might not now have to deplore the enormous waste of the world's best talent which has until now taken place. Sadder still is the reflection that this wasteful and criminal neglect has been accepted as an inevitable, even necessary, factor in the history of the arts and sciences. Added to the irresponsible abuses of the past a new and formidable enemy of art has appeared in the press. The modern journalist, a creation of our time, a being who talks about too many things to know anything about anything, is left free to publicise and indoctrine the world with his aesthetic journalese; with the result that the true artists of today have little chance of being able to show their works to a public able or courageous enough to form its own ideas in such an important branch of human activity.

The comparisons made have shown that all valid art productions contain invariable natural truths and qualities, data enough indeed to serve as a solid basis upon which to erect the true science of art criticism. All unquestioned art has been a clear, intelligible and universal language. Paraphrasing or translating it will not enhance its message. Practical criticism can only be conducted outside of personal prejudices for as our education and habits happen to be more or less normal or perverted so will our reactions to pure art be automatically pleasant or unpleasant.

New discoveries in art or science can only be understood and appreciated when studied impartially (objectively) without any conscious or unconscious predisposition to like or dislike them. Old or new truths in art or science do not require to be welcomed or hated. They are natural phenomena which happen in their proper time and place and insensate objections to them are as useless as a palette would be to a blind person or a piano to a deaf mute. The rancour which pure art has often provoked can only be considered as the impact of its collision with laboriously constructed conventions and theories; and while the detonation of the collision is still vibrating it is difficult to judge impartially.

We may recollect the furore in Paris when Manet first exhibited his "Dejeuner sur l'herbe." Let it be understood here that the hostile attitude of the Parisians was entirely an expression of their dislike of the literary subject-matter. They felt only too well the reality of Manet's picture and since they disliked his subject-matter intensely their hostility was in direct ratio with the clarity and ability of his craftsmanship. When the majority of the British people chose to consider Whistler a jester, they objected—like the Parisians—to his choice of subject-matter, and not to the art qualities contained in his work. History keeps on repeating itself as far as popular success or failure is concerned.

A final warning: Don't talk to pictures—let them talk to you, for if you are observing a work of art it has more to tell you than you have to tell it and moreover the story that it has to tell is a much more wonderful story than any concept of your imagination.

"You must approach a picture as you would a sovereign, let it speak first otherwise you will hear nothing but your own voice."—*Goethe.*

"The Chief Factors in the Rise and the Decline of Painting"

IT WAS THOUGHT FIT TO ADD THIS ADMIRABLY CONCEIVED AND arranged chart because its inclusion provides an opportunity of presenting in another form the main principles underlying the growth and development of the science of depiction. Designed by P. A. Leason, Art Director, Staten Island Institute of Arts and Sciences, New York, it is in its own particular way a synthesis of the theory which has been elaborated in these pages.

Numbers 1 and 1A on the chart mark the earliest form of depictive experiment. The visual realization of Leason's wording is seen in plate 2, page 233. As he puts it, this illustration is composed "of the outlined or silhouetted shapes of objects . . . coupled with expression of concepts of their behaviour and relation to other objects. Crude symbolization—infant art".

As mentioned elsewhere the reason for the use of the word *symbolization* is clearly demonstrated in the case of the man—his sex being determined by a symbol representing the male genital organ while the bird, we are to *read,* perches on the symbol of a branch. The bull is not a symbol but a primitive attempt to portray the actual appearance of the animal. This particular part in this specimen of "infant art" is therefore, for reasons already given, a pure experiment in appearances and as such shows the true beginnings of an evolution which finally led through a long course of time to the realization of ocular facts seen in the work of a Velasquez, a Corot and a Meldrum. This plate therefore does not entirely represent a visual demonstration of Leason's wording in the chart; it is a hybrid form containing two concepts, the man and the bird with the bull by sheer accident an elementary, but pure, statement of physical appearances. The reader can readily find other illustrations containing nothing but more or less easily readable symbols, e.g. Egyptian hieroglyphs.

Number 2 on the chart, "Expression of concepts as in 1 but reinforced by the expression of percepts of appearances. Natural colour attempted but proportions (drawing) chief interest", is not represented by an example among our illustrations but as we see the stage is revealed more or less in those artists having a 2 follow-

ing their names. Three of the best known painters coming at this stage in the development were Giotto, Cimabue and Jan Van Eyck.

Plate 3, page 235—the portrait attributed to Lorentino D'Arezzo —illustrates some of the statements made in stage 3 and 4. In 3 we see "things composing picture viewed more as separate units than as parts of a whole. Elaboration of detail. Tone being investigated, outlines being discarded but proportions still regarded as chief element". The "expression of percepts of appearances derived from more than one experience" is marked in this portrait by the amount of detail discernible in small subdivisions. Each of these subdivisions, smaller and smaller as the artist wished to portray or symbolize finer and finer details, were all ocular experiences having little or nothing in common with the one experience of the picture as an entity. The words "one experience" in stage 4 and "separate units" in 3 express the same concern for detail at the expense of the whole.

To amplify this point still further; a picture containing eight ocular experiences is simply a more or less happy combination of eight human pictures with the intention of producing one. The term human picture has been commented on in our previous remarks concerning the field of human vision and needs no elaboration here. Combinations of this sort are clearly evident in the landscape by Lorraine, plate 4, page 236, in which are portrayed at least sixteen human pictures joined together with great skill yet quite incapable of giving the sense of unity which we feel from the Whistler, plate 7, page 239, the Corot, plate 15, page 266, and especially from the Meldrum "Olinda Falls Road," plate 27, page 56.

The word *panoramic* as applied to pictures denotes the addition of many ocular experiences. It follows then that the paintings by Lorraine, Manet, Vermeer and Turner, plates 4, 20, 6 and 14 are clearly more panoramic than those by Whistler, Corot and Meldrum. The Rubens, plate 11, page 243, is also another example of a panoramic piece of depiction. From it as in all pictures of this type we sense an ocular attraction to fragments instead of being moved in the same way as we are by nature where we are content to view *human pictures* as complete and sufficient unto themselves. Contrast the Rubens with the "Maids of Honour" and this difficulty of sensing the former as an entity will be felt.

The evidence of the artist's preoccupation with small parts of his picture is sensed in the difficulty we experience in leaving the eye to rest tranquilly upon the whole. Every detail in a picture containing more than one experience claims the attention of the observer to the exclusion of bigger qualities and since a picture finally con-

veys the state of mind of the author so we can say that inasmuch as we find ourselves pulled to the consideration of small things that the artist was a *small painter.*

We come now to the fifth rung on the ladder of the development of depictive progress. "Expression of percepts of appearances derived from the particular experience as in 6, but with faulty understanding of relationships. Tone, proportions and colour found to be inseparable in correct analysis. Arbitrary ideas of composition being discarded. Man and other things being viewed, not as man, etc., but as parts of the pattern of the optical image". The chief difference between this stage and number 6 is contained in the words "faulty understanding of relationships". The advance on number 4 is that "Tone, proportions and colour" have been "found to be inseparable in correct anaylsis. Arbitrary ideas of composition" are "being discarded. Man and other things" are beginning to be "viewed not as man, etc., but as parts of the pattern of the optical image". This advance is clearly apparent when the portrait by Greuze is contrasted with the Raeburn. In the latter the more accurate adjustments of tonal relationships not only place the image at a certain distance from us but give also a more spontaneous realization of all the planes and spatial degrees contained in the subject. The Turner, plate 14, page 265, also, in contrast to the Hiroshige, plate 13, page 264, conveys the same feeling of confusion.

Having explained briefly some of the main features of this chart in its application to the slow progress of countless generations of depictors we arrive at the latest development—stage 6 "The search for knowledge; the discovery of pure sense: Expression of percepts of the order of relative importance of the factors composing the pattern of the particular optical impression; truth of proportions, tone and colour equally considered. No interest in mere picture-making; the painting regarded as a record of findings during the particular investigation. Most 'natural' painting; highest degree of truth; greatest departure from 'flat' painting."

The analysis of Meldrum's work as far as this chart is concerned is of particular interest. The student will notice that only one painter is marked as having reached stage 6 completely. In every other case where a painter is shown with 6 after his name other numbers also appear, but Meldrum's place is untainted by any other consideration or factor which might detract from his pigmental statements being considered as the "highest degree of truth"—in other words the "expression of percepts of the order of relative importance of the factors composing the pattern of the particular optical impression" unalloyed by any subjective perceptions and concep-

tions. The translation of such a state of mind into pigmental actuality is shown in "Self-Portrait", frontispiece; "Daffodils", plate 22, page 127; "My Lady's Table", plate 70, page 167; "Still-Life", plate 65, page 151; "Pamela Blakebrough", plate 87, page 131; "Dr. Forbes McKenzie", plate 85, page 130; "Mrs. Govett", plate 54, page 133; and "Self-Portrait", plate 53, page 129. In these pictures the observer is left to consider nothing but a "painting regarded as a record of findings during the particular investigation". This "discovery of pure sense . . . Most 'natural painting' " is quite obviously the "greatest departure from 'flat' painting".

The precise degree to which painters marked in this chart appear as having to some extent attained stage 6 varies in every case. For instance, Velasquez 5-6, is placed higher than Rembrandt 4-6-8, which means that the proportion of pure objective sense data in the work of Velasquez is greater than in that of Rembrandt, or for that matter Manet 4-6, or Degas 4-5-6. It has been said often enough in this book that the history of depiction shows clearly by its slow and hesitating progress the particularly difficult nature of the science of appearances for it is only now after the passage of many centuries that it becomes possible to begin to attempt to lay it down as such. As far as this chart is concerned the attainment of stage 6 completely and *with no influence from any other developmental state,* marks the birth of this study as a positive science.

In an age in which it is fashionable to stress self-expression the obvious lesson taught by the history of depiction is that it progressed alone through the efforts of artists who were not so much trying to express themselves in an individual way but rather to act as "interpreters between nature and man". It naturally follows since we have become so self-centred that the lot of the artist who attempts to bring people back to objective sanity is a sore struggle—a struggle against such odds as were never imposed on artists to the same degree in any other stage of the development of this art. The greater the opposition to pure science the greater are the efforts needed to establish it and an artist who would teach the impersonal, objective, dispassionate lesson of great art in these times is like one who has undertaken the task of a Sisyphus.

To succeed, as Meldrum has done, in the face of opposition which beggars description and understanding requires a combination of mental ingenuity, rare courage and an indomitable faith —a faith which can only spring from a conviction rooted in experiential data.

"The Peasant of Pace" page 157, "Portrait of the Artist's Mother" page 134, and "Mme Meldrum" page 132, show the artist

with the same objective interest but with developing technical and mental control. The principles underlying these works are exactly the same as those behind "Olinda Falls Road" or "Daffodils", but the methods and procedures necessary in the production of objective results are here slowly crystallizing and reaching a mature, certain form. This development in which the same objective persists can be seen in others of our illustrations. Compare, "The Concert", plate 12, page 245; with "The Weavers", plate 1, page 231; or the "Maids of Honour", plate 10, page 242.

The objective interest of the masters and their lack of interest in "mere picture-making" is magnificently exemplified in Rembrandt's "Flayed Ox", plate 17, page 269. One of his greatest pictures, it shows him at his objective best; it makes us feel that if anyone had suggested to him that he could have chosen a more *beautiful* subject to exercise on he would have wondered how the beauty which he saw in it had escaped his critic. The chart shows Rembrandt rated lower than Velasquez; his interest in the illustration of religious subject-matter (8) brings down his average. This is not to belittle him for he was one of the truly great. Economic necessities possibly compelled him to make illustrations which were readily appreciable and saleable but the sum total of his work marks him as one of the giants in the history of objective appearances.

Having now climbed to the highest point in the development of depiction let us examine briefly the deteriorating process which sets in from the moment subjective perceptions and conceptions creep in to confuse and degrade the lesson taught by the pure art of depiction.

The picture by Claude Monet, plate 5, page 237, exemplifies the retrogressive stage marked 7 in that although the artist was clearly attempting to depict nature objectively his result has been "weakened by the expression of concepts of appearances and the physical nature of light, colour, etc.—concepts borrowed from physics". The debilitating process here is caused by a concept borrowed from physics *which had not been checked up in its relation to actual appearances.* The resulting coalition of these borrowed concepts with the "expression of percepts of the particular optical impression" has led to the production of a hybrid and unsatisfactory picture. Among other things the unpractical technical method adopted by Monet made the control of exact tonal relationships impossible producing a landscape devoid entirely of spatial qualities in which all the things contained appear uniform and monotonous in texture. The words "uniform and monotonous in texture" will be understood by

comparing this picture with those of Lorraine and Vermeer, pages 236 and 238.

Continuing our descent to barbaric or infant art we come next to stage 8. "Expression of one or more concepts — concepts of art, beauty, decoration, religion, philosophy, ethics, history, legend, romance, heroism, colour, light, etc.—reinforced by the expression of combined percepts of appearances as in 4 and later as in 3". In the picture by Rubens, plate 11, page 243, "Henry IV Receiving the Portrait of Marie de Medici", the King is shown looking at her portrait and surrounded by mythological concepts of Minerva, Jove and Juno. Considered as a work of art it lacks the dignity and sense of unity found in "The Maids of Honour". As a whole the picture is a concept in which the King is seen as the central figure with the other parts treated as accessories and more or less successfully fitted in to give the idea of one picture. This method of obtaining unity is never very successful. The picture itself proves this statement for many of its parts incapable of being studied directly from nature had to be filled by the aid of a crude form of imagination. The result is unsatisfactory for as Constable has said, "Imagination never did and never can produce works that are to stand by a comparison with nature." The picture undoubtedly falls into the category of impure or applied forms of art being rendered impure by the addition of concepts of beauty, decoration, composition, heroism, romance and others which sully the quality of the painting if we are to consider is as a pure art product. How obvious is its infantile flamboyancy in contrast to the dignity and unity of the mature Velasquez opposite it in which every part of the picture was treated with equal respect.

"The Wheel of Fate" by Burne-Jones, plate 19, page 271, can be described as an allegorical concept and consequently it can only rank as an illustration—and even considered as such—depicted weakly. The quality of the painting has been almost completely subordinated to the illustration of a concept and this much more completely than in the Rubens, for Rubens at least when he wished to paint objectively could do it as a great master. To a much lesser degree the pictures by Giorgione and Manet show traces of concepts or aesthetic arrangements, but both these men were much greater craftsmen than Burne-Jones, and their pictures consequently are purer works of art. For this reason they have better withstood the test of time. "The Wheel of Fate" is practically a completed return to the point from where man's depictive experiments started. Burne-Jones' name does not appear in Leason's chart but we would mark this picture as a demonstration of stages 8-10-11-12; 8 because it is

mainly conceptual; 10 because it is a "return to 'flat' painting and outlines"; 11 because the "truth of proportions" are "being forgotten. Distortions and stylization" are "dominant" and 12 because it marks a "return to the expression of concepts" and is "without the simple and rational aims of 1". It is interesting to note that Rossetti, another of the pre-Raphaelite Brotherhood and a slightly better painter than Burne-Jones, is marked 3-4-8 on the chart.

Inevitably any classification of painters such as this chart gives must strike an average based upon their total output. It is quite impossible to describe adequately every facet of any artist's work and the author of this chart is well aware of this. He does not claim that all the ratings are necessarily quite accurate, but by and large they indicate the position of the painters dealt with on the tree of depictive development fairly well. Consider for instance, the case of Hogarth, marked 8. Hogarth was quite obviously a very great painter, but his average is pulled down by his occupation with certain types of subject-matter—"concepts of ethics, history . . . . romance, etc." In isolated instances, such as the "Shrimp Girl," and in parts of his larger illustrative pictures we have sufficient evidence to enable us to class him, as far as these works are concerned, as a significant painter. Rembrandt's score also suffers from something of the same disability and it becomes very difficult to assess the relative qualities of true and decadent factors in the work of such artists. In many cases, as we have already pointed out, the subject-matter may have been imposed on them and we are not always able to say with certainty just how far this irksome restriction affected the quality of their work. Unhappily, up to the present, unless the artist had financial security he has been obliged to cede to the demands of his patron or his market. Nevertheless, however far a painter like Rembrandt may have been obliged to make these concessions, he was still great and it is now impossible to gauge how far he would have gone in the elucidation of depictive problems had he been entirely at liberty to pursue his pure objective researches unfettered by financial considerations.

In the slow ascent from number 1 to number 6 the development of the craft of depiction can be felt as an unbroken sequence even to those people who have never wielded a paint brush. For such as these a basis of value is sensed and accepted. In contrast to this steady and invariable evolution something began to happen approximately from the year 1800. From about this time the work of many of the artists marked on the chart began

to sow confusion in the minds of the art-interested public. The basis of value became no longer clearly felt and in some cases such as Cezanne, Picasso, Gauguin and others it completely disappeared. Up to the date mentioned, art represented international truths spontaneously understandable to all people. From there onwards it became a series of small dialects only understandable to a few people and on condition that an arbitrary basis of value was accepted. All this period in which individual artists chose their own bases of value—bases which were not necessarily accepted by all artists and still less so by the general public, marks a complete state of decadence in which the impersonality of art as a science, so stoutly insisted upon by all the great artists prior to this, was flouted and derided. From this period art has become the expression of a mass of personal inhibitions impudently parading as the true art of to-day. Much could be said and many reasons could be given to explain this condition of festering inversions so much at variance with the healthy extraversions of the artists who have stood the test of time, but this is not the place to enlarge on this theme which indeed to treat fully would require a book in itself. We may, however, say briefly that among the chief causes are collective exhibitions, modern means of wide advertisement and propaganda and the venal manoeuvres of the business agents of art (the picture dealers, critics and editors of art journals, etc.). As for the loss of craftsmanship plainly evident in so many of the works dating from 1800, it can be traced to the introduction of the modern art academy replacing the more efficient methods of training of the apprenticeship system. This point has been sufficiently discussed previously. All these things mentioned began to happen from about the period stated and within this time so rapid has been the deterioration of the genuine craft of painting and so complete the suppression of the honest craftsmen that to-day we accept an art which can give no valid reason for its existence. In the chart this stage, this reaction, is marked as the "return to the expression of concepts only and crude symbolization, but without the simple and rational aims of 1." The meaning of this quotation is that primitive man could in all sincerity perform an *"infant"* form of art while we to-day with all the science of our ancestors at our disposal are called upon to perform a more adult form. Just as man could once upon a time in all sincerity and being strictly rational according to his period, imagine that he lived on a flat world. To-day with the knowledge that we now possess, this is no longer permissible.

—*Russell R. Foreman.*

THE DIFFUSING SCREEN

Description and Use.

In a pocket on the inside back cover of this book will be found the diffusing screen. The object of this aid is to assist the reader to appreciate in a simple and practical manner the order in which the eye becomes aware of visual differences. The screen is made up of three sheets of a dark transparent material and by rotating these on the corner eyelet objects can be viewed through either one or more thicknesses.

In order to check up the generalizing or splitting-up process as finely as possible it is essential that it should be used in the most efficient way. For this purpose the illustration or diagram must be held at a suitable distance at *right angles to the eye* and with the back towards the source of light. It should be held *close to the eye* to obliterate as far as possible all outside visual distractions. If it is found necessary to increase the generalizing effect of the three screens superimposed it will help if the subject is seen in a dim light and further still by half-closing the eyes at the same time. In this way it will be found possible to analyze the order of importance of visual phenomena to the subtlest of degrees. Finally, since the insistence in the preceding pages is on the necessity for the student or the interested reader to establish the cerebral awareness of visual phenomena (the quality and speed value of all the factors in depiction) the diffusing screen should be taken out and held in the hand for constant use.

For the purpose of demonstrating the use of the screen in relation to the principles stated elsewhere in the book examine "My Lady's Table" on page 167 and through either one or two sheets superimposed we may note how far the screen tends to generalize minor visual disturbances into larger and more important impressions—i.e. more foundational visual impressions or those possessing the greatest powers of survival.

To become articulate about these impressions we must not let the eye rove irresponsibly over the whole picture consequently some particular area must be specified as the subject for analysis. Take, for instance, the visual characteristics of the light and dark disturbances above the top of the statuette which make for us, *conceptually,*

a picture frame on a wall at a set distance behind the head of the little woman. Through the naked eye it will be seen that a light disturbance marking the left side of the frame is the most clearly seen characteristic in this particular subject of research. After this, the major tonal feature, we next become aware of the light disturbance forming the left bottom corner of what appears to be a picture surrounded by a dark mount. The eye then becomes interested in the right side of this frame where a relatively light horizontal disturbance and a dark disturbance are just visible. The top of the picture frame does not exist as a visual characteristic.

The result of this analysis of these elementary visual differences by the unaided eye may now be ascertained more accurately by the use of the diffusing screen. Seen through one of the sheets or filters the correctness of our analysis is immediately confirmed. We see that the horizontal light disturbance at the bottom of the frame tends to disappear. This same area viewed through two thicknesses is almost non-existent and we are sure that we experience a greater difficulty in sensing the light disturbance marking the right side of the frame. Seen now through three sheets this latter disturbance is no longer visible while the first two differences (the left side of the frame and the corner of the picture within the frame) still remain apparent. This analysis discloses therefore the order in which three tonal qualities in a proposition may be determined and related to one another in order of ocular appeal.

Using this same simple procedure the student may now examine any particular part of this reproduction, such as the perfume bottle, the big vase or the table cloth and establish for himself this same order. Similarly, the picture may be viewed as a whole and the resultant analysis will indicate that the major light disturbances—the forms having the greatest ocular appeal, those which we are more quickly cerebrally aware of—are contained in the figurine of the little lady. They can be seen laid down in the early formulas on pages 168 to 174.

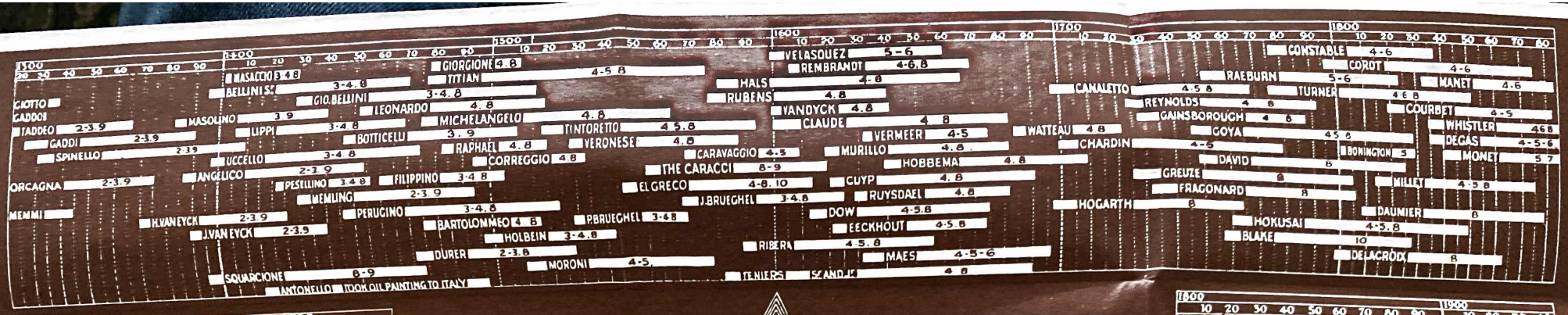
If the student sets himself exercises with the diffusing screen on other reproductions in the book he will find it increasingly easy to sum up on natural subject-matter, indoors or out-of-doors, the orders and qualities of the visual characteristics which constitute reality. The method of use to be applied in the analysis of three-dimensional subject-matter is no different from that just explained and the reader is strongly recommended to analyse some cut-off of reality about him—e.g. part of a room or a view out-of-doors.

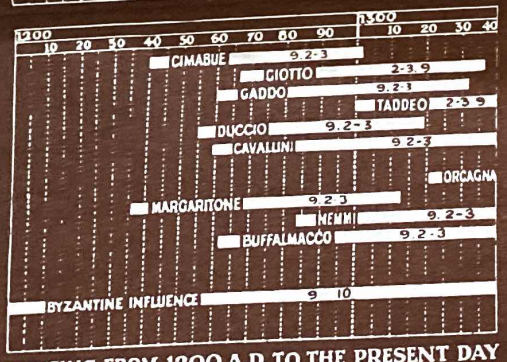
Viewing once more "My Lady's Table" on page 167, and this

time upside down, the 3-dimensional qualities which it contains are derived spontaneously. We see it as a statement of fact which no sophistries can undermine for it is built up from an entirely objective, dispassionate analysis of appearances.

Compare now the sensations which we feel from this plate with those which a more primitive form of art gives back to us, the portrait attributed to Lorentino D'Arezzo on page 235. As pointed out elsewhere, the eye wanders somewhat uncertainly over this plate, noting details such as individual hairs on the head, details of the necklace, the brooch and the dress. Having registered these minutiae the mind tends to create conceptionally an illusion of reality and unconsciously adds to the picture important visual facts which it does not, of course, possess objectively. How far we may have been induced to give credit to the artist for things that he had not actually achieved, can be determined by the use of the diffusing screen. Thus, through three thicknesses the woman's breast, back and shoulders against the line of the dress have become perfectly flat. Whether we should say that this particular part of the picture was felt to be in front of the dark surround or behind it is entirely optional. The sense of complete rotundity of the dress is equally wanting. The remainder of the picture should be analysed in the same way but in order that the truth of these statements, which concern the difference between objective facts and conceptual licence may be felt better revert often while so doing to the further examination of "My Lady's Table" for in the art of painting, as in any other science, all advances are relative.

This fine picture by D'Arezzo is a splendid example of the less advanced state of science of his time. The precise degree of ocular knowledge demonstrated in "My Lady's Table" or in the Frontispiece or in the Corot on page 266 could not have been achieved prior to the time of Lorentino—it had to happen afterwards.





PAINTING FROM 1200 A.D. TO THE PRESENT DAY

The intention in this chart is to outline the sequence of the most important factors which bring about a rise or a decline in painting. This outline is not new; its basic ideas were no doubt the basic ideas of the painters who contributed most to the later development of the art. Many histories of painting give the same sequence more or less clearly, according to the rational or irrational tendencies of their authors. But in few cases is 6 recognized as the logical highest step. Art historians usually stop at 4, and turning to find their ideals in 8, deride as "mere imitators" those few painters who continue on to 6.

It is not intended to suggest that concepts expressed in painting always have doubtful value. The anthropologist's, the zoologist's and the ornithologist's paintings, the sociological cartoon, the botanist's and the anatomist's pictures – these and many more, serve useful purposes and are usually the expression of concepts. What is implied is that these forms of expression contribute nothing to the development of painting; they deal with different aspects of reality from that of the painter. When their true function is overlooked and they are held to be great examples of painting, confusion follows. In this way they may become factors in the decline of painting.

6 The search for knowledge; the discovery of pure sense: Expression of percepts of the order of relative importance of the factors composing the pattern of the particular optical impression ; truth of proportions, tone and color equally considered. No interest in mere picture-making; the painting regarded as a record of findings during the particular investigation. Most "natural" painting; highest degree of truth; greatest departure from "flat" painting.

5 Expression of percepts of appearances derived from the particular experience as in 6, but with faulty understanding of relationships. Tone, proportions and color found to be inseparable in correct analysis. Arbitrary ideas of composition being discarded. Man and other things being viewed not as man etc. but as parts of the pattern of the optical image.

4 Expression of percepts of appearances derived from more than one experience and expression of concepts of appearances, composition, perspective, etc. necessary to combine these percepts. Less detail. Tone, proportions and color beginning to receive equal study.

3 Expression of percepts and concepts of the appearances of objects, but things composing picture viewed more as separate units than as parts of a whole. Elaboration of detail. Tone being investigated, outlines being discarded, but proportions still regarded as chief element.

2 Expression of concepts as in 1 but reinforced by the expression of percepts of appearances. Natural color attempted but proportions (drawing) chief interest.

1a Color added to expression.

1 Expression of concepts only – concepts of the outlined or silhouetted shapes of objects often coupled with expression of concepts of their behavior and relation to other objects. Crude symbolization; primitive – infant art.

THE CHIEF FACTORS IN THE RISE AND THE DECLINE OF PAINTING

BY
P. A. LEASON
Art Director
STATEN ISLAND INSTITUTE OF ARTS & SCIENCES.
STATEN IS., N.Y., U.S.A.

Copyright
P. A. LEASON

7 Expression of percepts of the particular optical impression somewhat as in 6, but weakened by the expression of concepts of appearances and the physical nature of light, color etc – concepts borrowed from physics.

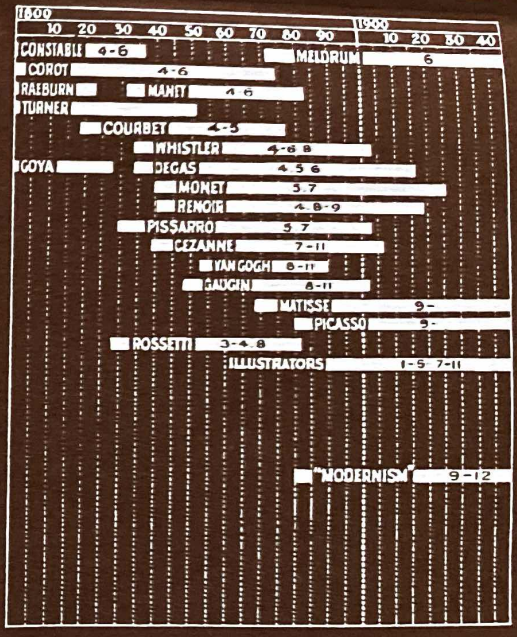
8 Expression of one or more concepts – concepts of art, beauty, decoration, religion, philosophy, ethics, history, legend, romance, heroism, color, light, etc – reinforced by the expression of combined percepts of appearances as in 4 and later as in 3.

9 Expression of one or more concepts as in 8 but with the reinforcement of expressed percepts diminishing. Reference to nature being abandoned for reference to pictures.

10 Expression of one or more concepts as in 8. Truth of tone and color being forgotten; return to "flat" painting and outlines. Distortions and stylization increasing. Man "recreating" nature in his own images.

11 Expression of all kinds of concepts. Truth of proportions being forgotten. Distortions and stylization dominant.

12 Return to the expression of concepts only and crude symbolization, but without the simple and rational aims of 1.



DEFINITION OF TERMS AS USED IN THIS CHART

Sense (sensation), **sense impression**. The product of sense organs. It ceases to exist for the mind when the stimulus which produced it ceases to operate on the sense organ.

Percept. The product of the perceptive faculty in its reaction to sense impressions, a mental occurence giving awareness of things outside the mind.

Concept. The product of the conceptive faculty (imagination), "a string of beads", each bead a fact or fancy pertaining to a thing or class of things. Examples: Jones has a body, head, limbs etc., is ambitious etc; Oak trees are thick in foliage, green in summer, yellow in autumn etc; Gremlins are small, haunt airplanes etc; This chart expresses a concept of the rise and decline of painting.

Appearances. The proportions, tones and colors of external objects as perceived in optical sense impressions.

problems
he true nature of Art.